



AND THE MILLING ENGINEER.

Fourteenth Year.—No. 11.

MILWAUKEE, NOVEMBER, 1889.

Subscription Price, \$1.00 Per Year.

STILWELL &amp; BIERCE MFG. CO.

—\* DAYTON, OHIO, U. S. A. \*

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Manufacturers of the Celebrated ODELL ROLLER MILLS and a full line of

Flour &amp; Corn Mill Machinery.

MILLS BUILT ON THE

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FOR 1890-'91

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OPERATING

The RICHMOND

THE LARGEST AND BEST LINE OF  
GRAIN CLEANING MACHINERY

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Careful and Successful

MILLERS.

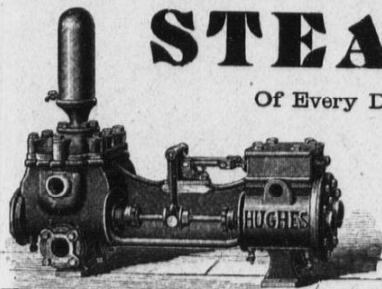
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Hughes Bros. Steam Pump Co.,  
CLEVELAND, OHIO.

Builders of Single and Duplex

STEAM \* PUMPS

Of Every Description for all kinds of Work.



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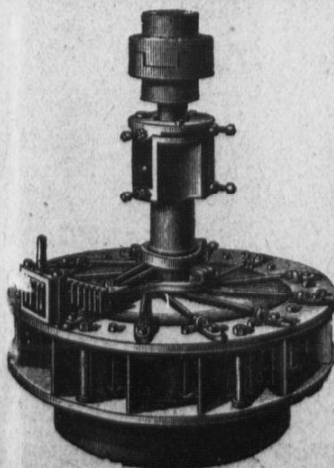
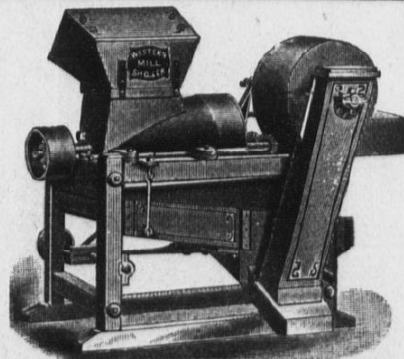
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MILL SHELLER.The most Compact, Durable, Best Sheller  
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speed, requires no attention. It is in  
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The "OLD RELIABLE" with Important Improve-  
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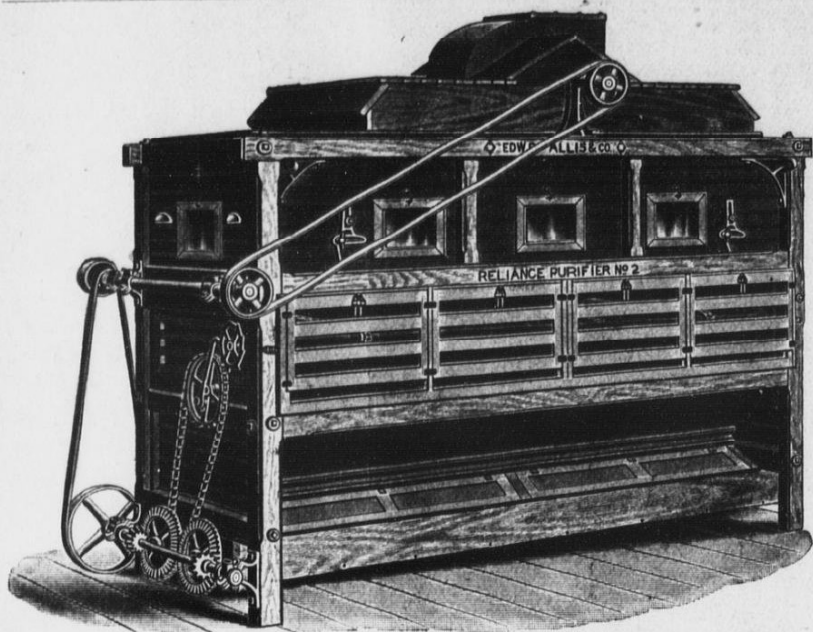
Mill Builders and Mill Furnishers,  
RELiance WORKS, - - MILWAUKEE, WIS.

SOLE MANUFACTURERS OF

... THE ...

## Reliance

## Purifier.



### IMPORTANT NOTICE.

The Principal Features of the *RELiance PURIFIERS* are covered by our own patents, but to afford the fullest protection to our customers we have made arrangements by which it is now Licensed under all the patents of the

**CONSOLIDATED MIDLINGS PURIFIER CO.**

This puts it out of the power of Anybody to trouble its purchasers, and backed by the acknowledged excellence of the machine itself, makes it to the interest of every Miller who wants The Best to purchase the *RELiance*.

**THE RELiance PURIFIER** Has been on the market but a short time, but has become a recognized necessity in the best mills, and is used by the Staten Island Mill, New York City, 1,500 bbls.; the Imperial Mill, Duluth, Minn., 2,000 bbls.; the Listman Mill Co., La Crosse, Wis., 1,000 bbls.; the C. C. Washburn Flouring Mills, Minneapolis, and hundreds of others.

50

Gray's  
Noiseless Belt  
Roller Mills,

19

Gray's  
Improved  
Centrifugal Reels,

64

Gray's  
Improved  
Flour Dressers,

### AN IMPERIAL SUCCESS.

DULUTH IMPERIAL MILL CO.,  
DAILY CAPACITY, 2,000 BARRELS.

DULUTH, MINN., Oct. 24, 1889.

Messrs. EDW. P. ALLIS & Co., Milwaukee, Wis.

Gentlemen: In accepting and making final settlement with you for the building and furnishing of the Imperial Mill we wish to state that all of the machinery manufactured and furnished by you, viz.: the *Reliance Purifiers*, *Flour Dressers*, *Centrifugal Reels* and *Sieve Scalpers*, are, like your *Gray Roller Mills*, standard machinery, and not excelled by any in the market.

Before making our contracts we made a careful inspection of the different systems and machinery in the best mills, and now feel that we made no mistake in awarding you the contract. We are well satisfied that your guarantees have been more than fulfilled as regards quality, percentages, yield and capacity. We undoubtedly have *the best mill that has ever been built*, which, together with the superior quality of Duluth hard wheat, enables us to turn out grades of flour that are unequaled, and reports we have received from expert bakers fully substantiate this statement.

Yours truly,

DULUTH IMPERIAL MILL CO.

Per B. C. CHURCH, Secretary and Manager.

10

Gray's  
Sieve Scalpers,

26

Reliance  
Purifiers,

ARE USED BY THE

NEW

Imperial Mill

—AT—

DULUTH,

AND ARE ENDORSED AS THE BEST

# The United States MILLER

## AND THE MILLING ENGINEER.

Fourteenth Year.—No. 11.

MILWAUKEE, NOVEMBER, 1889.

Subscription Price, \$1.00 Per Year.

### A GREAT ESTABLISHMENT.

ROBERT POOLE & SON CO., Baltimore, Md.

THE city of Baltimore has long been known for its rapid development of engineering and machinery, and with the march of improvement there has been a pronounced tendency to encourage manufactures and industries contributing to the prosperity of the States. A revolution most extraordinary in character has been developed in machinery and mechanical engineering, and the changes effected in the last half century are of the highest importance. In practical mechanism it is interesting to know something of the invention and progress of machines which have contributed so largely to multiply the manufacture as well as the construction of other machines in every day employ. For a single example of success, note the firm of Robert Poole & Son Co., who are now so extensively engaged in the manufacture of machinery.

Robert Poole, the founder of the present concern, as a youth received a practical education, and entered the business arena with a full and complete knowledge of the principles of construction and design. Commencing business in 1843, he associated with him William Ferguson, under the firm name of Poole & Ferguson. In 1847 German Hunt, who had been in the employ of the firm, and whose knowledge of machinery and engineering was highly valued, was taken as a partner and the firm changed to Poole & Hunt. In 1853 their works in Baltimore were destroyed by fire, and after considerable delay in the selection of a more favorable site for business, Woodberry was decided upon as a place for future operations. For nearly half a century the firm has steadily grown to its present proportions, and on the first of January of the current year a final and likely permanent change was made in the firm, hereafter to be known as Robert Poole & Son Co.

Their workshops are handsomely and substantially built of stone and brick, covering about 15 acres of ground, the Northern Central Railway passing directly through their premises. The iron foundry is 270 feet in length, by 160 feet in width, the machine shop, 530 feet long by 60 feet wide; the erection shop, 125 by 80 feet; the smithery, 180 by 53 feet; the boiler shop 175 by 70; the pattern shop 68 by 40 and the storehouse for stock of finished machinery 175 by 75. Throughout the entire establishment, in every department, are to be found the most improved machinery, tools, and appliances for the production of transmission machinery and castings of the heaviest order of workmanship.

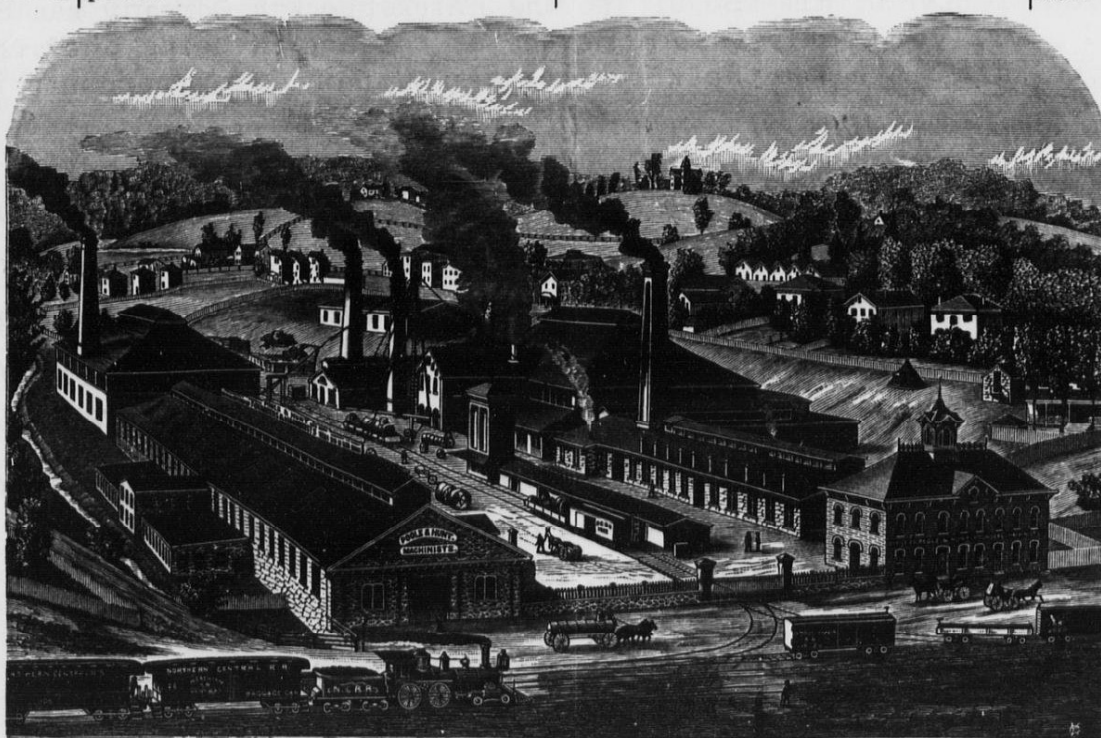
The cable railway system, which has been introduced into many of the leading cities of the country, and finds additional favor as its advantages are demonstrated, contributes a special and most exhaustive feature in engineering skill and machinery. The operating machinery of the principal cable roads of the country have

been manufactured by this firm, and the perfect illustration herewith will afford the reader some idea of the massive machinery required to operate a cable railway. That the production of such machinery requires both brain and great manual labor to plan and construct, so that each part shall perform its work, is most notably present in viewing from all points this most extensive plant. The *Scientific American* says: "The operating machinery of the 10th Avenue cable railway of New York city was built by Messrs. Poole & Hunt of Baltimore, Md. Its smooth and almost noiseless motion exhibits skill in executing the design; while the great size of many of the parts, shows the facilities at their command and conveys some idea of the extent of their works."

The introduction and manufacture of the Leffel Turbine Water Wheel by this firm during the lifetime of the inventor, and the ultimate security of the right to sell to all States and Territories, forms a special department of manufacture, which is most attractive to those who use water power.

illustration are finely drawn, and the most minute points of action are readily observed. A most exhaustive and accurate tabulated statement of sizes of wheel are also embraced in this pamphlet, running from 7½ to 87 inch, with horse-power, cubic feet and revolutions of each. Directions for setting the wheel are also given in detail, with a relative and scientific article on the measurement of water, all knowledge of which is of vital importance to those using the Leffel wheel.

They are the manufacturers of the celebrated dredge known as the "Von Schmidt Hydraulic Dredge." Their plant for the production of machine moulded gearing is perfect in design, and possesses the facilities for producing all kinds of heavy gearing of the most approved proportions and accuracy of pitch. Their lines of manufacture are most numerous, all machinery for the transmission and distribution of power for flour, grist, cotton, woolen and paper mills and fertilizer and other factories, are embraced in their extensive catalogue.



ROBERT POOLE & SON CO.'S WORKS, BALTIMORE, MD.

"The Leffel Double Turbine should not be confounded with other classes of wheels, as it is constructed and acts upon entirely and essentially different principles, which are peculiarly characteristic of it as a water-wheel. There is in it a combination of two independent sets and kinds of buckets, one a vertical, the other a central discharge, each entirely different in its principle of action, yet each wheel or series of buckets receiving its water from the same set of guides at the same time; but the water is acted upon but once, since half of the water admitted by the guides passes to one wheel, and the other half of the water to the other wheel, the water leaving both wheels or sets of buckets at the same time and as quickly as possible. These two sets of buckets are so combined as to make really but one wheel; that is, both are cast in one piece and placed upon the same shaft."

This firm, in a highly illustrated guide to millers, manufacturers and others, give a series of 21 cuts, showing the different conditions and positions under which this wheel operates. The lines in each

### STEAM JACKETS.

IN Watt's first patent the steam jacket as a means of preventing condensation in the steam cylinder is mentioned, and in his second patent it is shown in the drawings. No doubt Watt had a general notion that it was good to keep steam in a cylinder warm, but it is very difficult to see that he could have justified the use of the jacket on any principle then known to science. In fact, we must go rather deeply into the most modern views of the action of steam to understand at all how a jacket can increase efficiency. For, note first that a jacket does not diminish but rather increases the direct loss of heat due to radiation. Whatever radiation takes place from an unjacketed cylinder the same must occur from the jacket, increased a little by the greater surface of the jacket and more continuous high temperature inside. In the next place the heat supplied by the jacket to the steam in the cylinder would, at first sight, seem to be necessarily less efficient than heat supplied directly into the cylinder. for the heat supplied from the jacket acts

on the average through only part of the stroke and some of it passes away during exhaust, when it does no good directly in increasing.

There is another anomaly about the use of a jacket I should like to point out in a popular but, I think, striking way. Turning to modern and exact measurements it appears that in good, ordinary engines the initial condensation of steam in the cylinder at each stroke amounts to, in very favorable cases, 10 to 20 per cent. of the steam admitted. In a great many engines not considered to be working in unfavorable conditions it amounts to 50 or 60 per cent. of the steam admitted. Now, I suppose, it is not an uncommon idea about a steam jacket that its influence is very largely due either to its keeping the steam dry or to its causing direct re-evaporation of the water in the cylinder. But just see how totally inadequate a jacket must be for any purpose of that kind. Take an engine in which 40 per cent. of the steam is actually condensed. To be adequate to re-evaporate 40 per cent. of the steam supplied by heat transmitted through the wall the

cylinder surface ought to be at least equal in area to four-tenths of the boiler surface. In fact, from the small difference of temperature on two sides of the cylinder wall compared with that on two sides of the boiler wall, less heat goes through a square foot of cylinder wall than through a square foot of boiler wall. Yet the cylinder area is only a small fraction of the boiler area. Hence, the value of the jacket, so far as it acts in directly increasing the work of the cylinder by re-evaporation, must be an insignificant one.

Look at another point. Suppose it was possible to construct a cylinder with a perfectly non-conducting wall. How would the steam work in such a cylinder? There would be no loss by radiation. There would be no possible cooling of the steam during admission by the wall itself. In that case if the steam entered the cylinder dry I do not think there would be any initial condensation. For suppose we start with one pound of water put into the cylinder. Initially that must be heated up to the temperature of the entering steam, causing condensation. During exhaust evaporation would take place and the pound of water cool down again. In the main, each ounce of steam initially condensed to heat the water in the cylinder would be condensed at a high temperature (that of admission) and re-evaporated at a low temperature (that of exhaust.) Hence, as the total heat is less at the low temperature less heat is taken to re-evaporate an ounce of water than it initially gave up in condensing. A little heat would be left behind which would tend to dry the cylinder. Going on in this way, the pound of water initially put in the cylinder would gradually disappear.—Prof. Unwin.

The new Minneapolis milling combine is to be known as the Pillsbury-Washburn Flouring Mill Company.

# Vortex Dust Collector Co.

## To Our Customers and the Public!

*In response to the comments and statements made by the Knickerbocker Co., of Jackson, Mich., we are compelled in self-defense to make this reply:*

It is true that at a meeting in Chicago between our Mr. Ferdinand Schlesinger, president of the Vortex Dust Collector Co., and Mr. Knickerbocker, the president of the Knickerbocker Co., it was agreed that an amicable suit should be conducted for the purpose of determining the validity of the Knickerbocker Company's claim; and that we should permit a customer of ours to be sued in the Northern District of Illinois for the purpose of determining that question. It was further agreed that until the determination of that suit, our customers and our trade should not be annoyed by any threats or other action on the part of the Knickerbocker Company.

In accordance with that agreement we received the following letter from the Attorneys for the Knickerbocker Company, which conclusively shows the existence of such an agreement, although the agreement itself it was not thought necessary at the time to reduce to writing:

Law Office of JENNEY, MARSHALL & RUGER,  
No. 15 Third National Bank Building.

VORTEX DUST COLLECTOR CO., Milwaukee, Wis.:

SYRACUSE, N. Y., August 1, 1889.

Gentlemen: Your letter of the 23d ult to the Knickerbocker Company has been referred by that company to me. Will you kindly inform me who at Chicago is using one of your machines, so that I may bring a suit there for the Knickerbocker Company, in accordance with the suggestion of your letter.

Yours truly,

E. S. JENNEY.

*We have retained Messrs. Winkler, Flanders, Smith, Bottum & Vilas, of Milwaukee, to defend any and all of our customers in any suit that may be brought against them, and have instructed them to defend all such actions with the utmost possible energy. We further agree to indemnify and save and keep harmless any of our customers from the result of any infringement suit, or any other suit whatever, brought by the Knickerbocker Company on account of the use of any machine made or sold by us, and we hope that no one will refuse to buy one of our machines before writing us and getting particular information as to the responsibility and reliability of such guaranty.*

We desire further to append a letter received from our attorneys in regard to the prospective litigation, and we consider ourselves safe from any ultimate loss at the hands of the Knickerbocker Co.:

F. C. WINKLER,  
J. G. FLANDERS,  
A. A. L. SMITH,  
E. H. BOTTUM,  
E. P. VILAS.

WINKLER, FLANDERS, SMITH, BOTTUM & VILAS,  
Counselors at Law.

VORTEX DUST COLLECTOR CO., City.

Gentlemen: We have at your request looked into the matter of the claim of infringement made by the Knickerbocker Company, based upon the manufacture of your Vortex Dust Collector. The state of the art, in our judgment, discloses no sufficient foundation for the claims of the Knickerbocker Company.

We believe that an absolutely impregnable defense can be made in any action for infringement, based upon the manufacture or use of the Vortex Dust Collector, as made by you.

We acknowledge your instructions to appear and defend any and all of your customers in any action brought against them, and will cheerfully act in accordance with your wishes under your retainer. (Dictated.)

Yours very respectfully,

WINKLER, FLANDERS, SMITH, BOTTUM & VILAS.

## Vortex Dust Collector Co., Milwaukee, Wis.

# UNITED STATES MILLER AND THE MILLING ENGINEER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00  
To Canadian subscribers, postage prepaid..... 1.00  
Foreign subscribers..... 5s.  
All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker.  
Bills for advertising will be sent monthly, unless otherwise agreed upon.  
For estimates for advertising, address the UNITED STATES MILLER AND THE MILLING ENGINEER.

[Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.]

MILWAUKEE, NOVEMBER, 1889.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER AND THE MILLING ENGINEER. You will thereby oblige not only this paper, but the advertisers.

WE send out a number of SAMPLE COPIES of this issue. We solicit a critical examination of our Journal and invite you to subscribe. The price is one dollar per year. No premiums—no discount. Our December number will contain matters of special interest to millers which you will not find elsewhere.

CANADIAN oatmeal millers are again organizing a "Combine."

A VERY unique, perhaps we ought to say antique looking advertisement of the Richmond Manufacturing Co., appears in this issue.

THE Cackle Separator Mfg. Co. of Milwaukee, have just issued a new and handsome catalogue of their specialties. Millers and grain dealers should send for it.

THE suit which has been pending so long between the Consolidated Roller Mill Co. vs. The Barnard & Leas Mfg. Co., of Moline, Ill., has been set for hearing Nov. 19.

WITH this number we commence the publication of a series of articles pertaining to flour milling by J. F. Mueller, M. E. We commend them to the careful attention of our readers.

THE Manitoba department of agriculture finally reports that 7,201,519 bushels of wheat were raised in that province in 1889 on 623,245 acres, showing a yield of 12.4 bushels per acre.

THE idea seems prevalent among a great many millers and mill-machinery men that the patent on the traveling brush expires next year. The patent does not expire, we believe until 1892.

THE Geo. T. Smith Middlings Purifier Co., have moved into their immense new works. A considerable portion of the plant is now in operation, but it will not be complete for a month or more yet.

THE cracker manufacturers met in Jackson, Mich., Oct. 26, organized and transacted their business behind closed doors. Crackers will probably go up a cent or two, until someone cuts prices.

WE regret to learn of the death of Harry, youngest son of Geo. T. Smith, of Jackson, Mich. He died Oct. 15. He was a bright lad, and his parents have the sympathy of all who know them, over this irreparable loss.

THE first annual meeting of the Stone Millers' Association of Michigan, will be held at the parlors of the Wayne Hotel in Detroit, on November 20, at 1 P. M. Every stone miller is requested to be present by J. Hardenberg, President.

THE Wheat Grower Convention held recently in St. Louis passed a resolution recommending "farmers when and where practicable to build joint stock

elevators for their own use and benefit." This will suit elevator builders, but the average farmer will find it up-hill work to run an elevator.

WE acknowledge the receipt from Hon. Charles F. Peck, Commissioner of Labor of New York, of the report of the Bureau of Statistics of Labor, for the year 1888. It treats the subject in an exhaustive manner. Elsewhere will be found some statistics relating to wages in New York flouring mills and grain elevators.

MR. GEO. T. SMITH, of the Geo. T. Smith Middlings Purifier Co., of Jackson, Mich., is in Milwaukee, (Nov. 13) on a business visit. He reports business thriving. The company has recently received some very heavy orders from abroad for their specialties. He expresses great satisfaction with Judge Brown's decision which will be found elsewhere.

H. D. PORTEOUS, ESQ., of the flour and grain importing house of H. D. Porteous & Co., Liverpool, England, called on us recently. Mr. Porteous has been visiting a number of the leading exporting millers in this country, during the last few weeks. He anticipates a good year's business. Having nearly completed his mission here he will soon return home. *Bon Voyage.*

THE steel steamship America recently arrived in Buffalo with a cargo of 104,000 bushels of corn. In 22 hours thereafter she was ready to sail again, having discharged her cargo and taken on a return cargo of 2,700 tons of coal. No special effort at speed was made. If there had been, it is claimed that the work could have been done easily in 18 hours. So much for modern appliances.

THE Modern Miller, Kansas City, Mo., comes to hand this month full of good things, editorially and otherwise and is very handsomely printed. It is well patronized and we have no reason to doubt that it renders valuable service to its patrons. Its publisher is full of Western "push" and is one of those happy spirits that makes friends of those with whom he comes in contact. His paper is the only real milling journal published West of the Mississippi.

THERE has not been a time during the past six years when there was so much large and important flour milling work in progress of construction or planning for construction as at the present date. Plans are being prepared for some mills larger than any yet built. Dealers in mill supplies are kept busy in supplying the daily wants of the trade and good flour mills in favorable locations are as a rule running up to capacity. The export trade is not all that could be wished for by any means but there is comparatively little grumbling.

H. C. THOM, Dairy and Food Commissioner, writes us as follows:

As a most suggestive indication of the wide spread adulteration of food and drugs which has been going on, I desire to state that the Wisconsin Dairy and Food Commissioner recently took thirty samples of Cream of Tartar from reputable dealers in this state, and in all but six not a trace of cream of tartar was found by chemical analysis. The twenty-four adulterated samples were composed of tartaric acid, alum, starch, lime, plaster paris, sand and various other adulterants. The people hardly realize the extent of the fraud that is imposed on them.

FROM observation of the sayings and writings of men, we conclude that it is human nature to exaggerate even when such a course might readily be foreseen to lead to unprofitable results. We like to speak of our great country, its inex-

haustible resources, its bountiful crops etc., but it is self evident that if our statisticians take too rosy a view of things and over-estimate our crops in giving their report to the world, they do the farmer a direct injury, which reflects on every other branch of trade. Some pretty plain talk on this subject was indulged in at the Farmers' Convention held recently in St. Louis. It was claimed that if the government statistician at Washington should in making up his returns lean as much towards a short crop report as he has for years past towards a big crop report, it would make a difference of a hundred millions of dollars to the farmers of the country on wheat and corn alone. This conclusion is also doubtless an exaggeration. It is suggestive however, that great care should be taken in making these reports and that they should rather be underestimated than overestimated even if our vanity for big figures has to suffer.

THE WASHBURN-CROSBY MILLING COMPANY announces that by September, 1890, the time when its lease will expire on the Washburn mills in Minneapolis, it will have a \$2,000,000 plant in operation in Duluth, with a daily capacity of 6,000 barrels. An officer of the Company is reported to have said: "The plans for the plant at Duluth embrace a mill with a 6,000 barrel capacity, an elevator of 750,000 bushels capacity, and a large warehouse capable of holding 300,000 barrels of flour. The buildings will be located on the lake front, and will have ample dock and rail facilities. Our company owns the St. Anthony and Dakota elevators along the Manitoba lines: hence you can readily see that Duluth is just as accessible to the great wheat producing region of Minnesota and Dakota as is Minneapolis. We have been looking over the ground at Duluth and find that we can secure an excellent location there. In case we locate there, the same company will build and operate the mills as is now in control here. We also expect to secure the co-operation of persons who are largely interested in Duluth real estate.

THE Northwestern Miller has published some articles recently which have had the effect of stirring up the Richmond, Va. flour trade. We regret that our contemporary should have deemed it advisable to especially select Richmond alone, for there are certainly other points in the South that can show as many instances of unsatisfactory deals as Richmond. It is not fair, in our opinion to crucify the trade in a general way at a certain point. There are, unquestionably, crooked flour dealers not only in Richmond and Atlanta but in almost every place which is considered a flour market. But there are straight honest dealers at all these points, and the miller frequently has himself to blame for not making strict inquiry concerning the financial condition and character of the dealer soliciting his trade. In our opinion a man's character, even from a commercial point of view, is of as much importance, to say the least, as his financial condition, and it is easy for a miller in these days of commercial agencies and banks to find out a good deal about a prospective customer. It is true that several millers at recent conventions have spoken of Richmond and some other points quite bitterly, but the sins of one or more dealers in a town should not blast the reputation of all the rest. While we can not endorse the course taken by the Northwestern Miller, we believe it will be in the end a good thing for Richmond. Square dealers will be aroused from the lethargy they have fallen into and will purge out of their city the evil doers and in the future they may even thank the lance of criticism that removed the tumor of dishonesty which threatened to utterly ruin the Richmond flour trade.

## CAWKER'S AMERICAN FLOUR-MILL AND GRAIN ELEVATOR DIRECTORY FOR 1890-'91.

THE above standard work will be ready for delivery in March, 1890. This will be the seventh directory of the flour and grain trade, issued by the publisher, and all who have used them, testify to their increasing accuracy and utility to the trade. Briefly outlined, the principal features will be as follows:

1. List of Flour Mill owners of the United States and Dominion of Canada, Post Office address, County and State, and where information is obtained capacity in barrels of flour per day of 24 hours, kind of power used (steam or water), roller or stone system.
2. Lists of Corn, Oatmeal, Rice, Rye Mills, etc.
3. List of Grain Elevators and Warehouses.
4. List of Millwrights.
5. List of prominent American Flour and Grain Brokers.
6. List of Foreign Flour and Grain Importers.
7. List of Mill Furnishers, etc.
8. Statistics valuable to the trade.

Communications from millers in all parts of the United States and Canada on any of the above mentioned points, will be thankfully received by the publisher. Further, any suggestions that will tend to add to the value of the work will be fairly considered. All letters concerning this matter should be addressed to E. H. Cawker, Milwaukee, Wis.

### ONE GREAT MILLING DEAL MADE.

WHERE WILL THE NEXT BE?

AT last the announcement is made without contradiction that the great Pillsbury-Washburn deal has been consummated. The newly organized company is styled "The Pillsbury and Washburn Flouring Mills Co., Limited." Its property consists of the Pillsbury mills "A" and "B," "Anchor" and "Palisade" mills in Minneapolis, and the "Lincoln" mills at Anoka, Minn., also Minneapolis and Northern elevators, having 6,000,000 bushels or more capacity; the Atlantic Elevator System with something over a million capacity; the St. Anthony Water-power, etc., etc. It is said that the price paid for all this property was \$6,250,000.

It is a great consolidation. The only wonder is that something of the kind was not done long ago. The questions which agitate the minds of the milling public just now, are how rapidly will other consolidations take place? How will they affect the milling industry not only of this country but of the world?

It is a mistaken idea of a large portion of the public that all or most all of the money invested in these so-called "syndicate" purchases is from foreign sources. Doubtless much of it is, but we believe but little more than half. There are countless millions of American capital seeking investment, and the idea of placing it in conjunction with foreign capital in American enterprises is peculiarly fascinating, especially where the product or a large portion of it is to be sold in the country from which a considerable portion of the invested capital comes.

The air is full of rumors of prospective purchases of milling and elevator property and other manufactories, and London financial papers are teeming with advertisements encouraging their readers to invest. Many of these schemes are good, and many more we dare say are being pushed for the sole benefit of the promoters.

There is one good thing about this mutual investment of domestic and foreign capital. It tends to secure peace between the United States and foreign countries. It leads to that happy termination so well expressed in the words of Holy Writ, "Then shall they beat their swords into plowshares and their spears into pruning-

CONTINUED ON NEXT PAGE.

hooks; nation shall not lift up sword against nation neither shall they learn war any more."

In the meantime more great mills are being built here by men of sound business views, and they believe they are going to make money out of their investments. There is little doubt but United States millers and milling engineers, working together, with the magnificent wheat resources of the country to work upon, can compete successfully for the trade of any flour importing country in the world.

## CORRESPONDENCE.

(From our own Correspondent.)  
**OUR ENGLISH LETTER.**

English wheat situation.—Crop prospects in Australia.—Prospective labor troubles of English millers and bakers.—Anglo-American Companies.—Grain Elevators to be built in Russia.—Proposals wanted for an Eiffel tower in London, etc., etc.

LONDON, Nov. 2, 1889.

From some parts of England complaints are heard of the wheat sowing having been delayed by the wet state of the land. Fine weather is urgently wanted for a few weeks so as to get the farm work over before the winter comes on. Most disheartening accounts are to hand from the mountainous districts of North Wales, where some fields are even yet uncut, though the acreage in this condition is not large, but there are hundreds of acres yet unharvested, and the continued wet weather is seriously injuring the corn lying on the ground. Business has gone on at a slower pace during the past week or ten days than that which animated the first half of October. An estimate of the yield of the wheat crop of 1889 in Great Britain has been made by that well-known English authority, Sir J. B. Lawes, who uses as a basis for his calculations the results obtained from the experimental plots at Rothamsted which have grown wheat for forty-six years. He points out that although up to the middle of June the conditions were favorable to the growth of a large crop, about that time there was a change in the prospect. For fifty-five days from early July to the end of August there were only two days on which the large guage at Rothamsted did not register rain, and on July 12th over three inches were recorded. Sir J. B. Lawes concludes:—Our estimate of the yield of the country is 27½ bushels per acre at the standard weight of 61 lbs. per bushel. Taking the area of the 1889 crop and a yield of 27½ bushels per acre, the gross produce will be about 8½ million quarters, and deducting two bushels per acre for seed on the same area, the home produce available for consumption will amount to a little over eight million quarters (8,098,545.) Taking the population for the current harvest year at rather over 38 millions (38,140,830) the amount required for consumption at 5.65 bushels per head will be nearly 27 million quarters (26,936,961) and deducting from this the quantity available from the home crop, there remains nearly 19,000,000 qrs. (18,838,416) to be provided by stocks and imports. The receipts of wheat in quarters of 960 lbs. for the past cereal year, by this country is thus given in a table published by *Dornbusch's List*—

America	Russia	India	Central Europe
6,868,591	5,639,762	2,259,133	2,144,433

and from other countries 2,243,805 qrs. If these figures are compared with the estimate made by Sir J. B. Lawes, we shall find that there will be a little less foreign wheat required for feeding the English people during the next eleven months. From Russia at this time of the year we expect large wheat shipments, but if we compare the shipments of last week with those of the corresponding week of 1888 and 1887, we find a great falling off, which is likely to continue to about the same extent for some months to come. Those of last week compared with 1888 and 1887 are:

1889	1888	1887
327,911	453,941	345,970

This falling off must be supplied by other countries and no doubt America will soon make great progress with her present export figures of flour, so that the English millers will again feel their shoes pinching, although American millers have a lot of lost ground to make up.

Harvest in Australia appears likely to be early, as there was wheat three feet high and in ear before the middle of September in one of the northern districts of Victoria, which is not by any means the earliest of the Australian colonies. Up to the date of the latest postal advices prospects continued to be favorable and a good harvest was confidently expected. It is quite possible that sanguine expectations will be disappointed;

but after the crops have come into ear under highly favorable circumstances, there is not much reason to fear such a bad failure as occurred on the last occasion. Shippers therefore expect a good export surplus of wheat from the growing crops and are now offering Dec.-June at 36s. 9d. per 480 lbs. Even at these prices English white wheat seems good and cheap at 36s. per 504 lbs. At the present time India, who has several times been a thorn in the American wheat sellers side, is exporting very small quantities of wheat.

Germany, Hungary, etc., which last season sent some two million quarters of wheat to the United Kingdom, are now competitive buyers of wheat and rye.

The English millers will have to pass through a severe period directly from the competition of American millers and their tempers are just now not at the best, when they look ahead and see, besides outside troubles, inside discontent. The executive of the Millers' National Union has issued an appeal to the working millers of the United Kingdom inviting them to join the Union, which asks for a fifty-four hour week, time and a half for overtime, double pay for Sunday labor, a uniform rate of pay for each section throughout the trade, all mills to be made as safe and healthy as possible and the abolition of the character system. A large meeting of master bakers was held on Wednesday last, the 30th October, and a resolution was moved expressing sympathy with the operatives in their endeavor to secure a limitation to the hours of labor, but affirming that a working day of ten hours or sixty hours per week, was not suitable for the general trade, and therefore could not be of a lasting character if attempted to be enforced. The resolution, after a lengthy discussion was carried with fourteen dissentients. Another resolution carried was that declaring that a twelve hours' working day or seventy-two hours per week, inclusive of meal times, could be adopted by the trade to the advantage of both employers and employed. Should it be necessary—as it is believed it will be, for the bakers to strike on November 9th to secure their demands, the difficulty of dealing with those masters who have consented to the concessions asked for will be got over in this way. A certificate duly signed, will be drawn up and given to each "fair" master baker to be exhibited in his window. The public will be asked to deal only with those tradesmen holding the certificate. Already the London Trades Council have decided to appeal to the members of the several trade societies of the metropolis to support the action of the strikers by refraining from purchasing at the shops where the certificate is not found. With a bakers' strike now which will do some damage to the milling trade and a strike amongst the milling operatives, American flour should soon get to its old position on the English market.

Two large companies have been placed on the English market, namely, The Chicago and North-Western Granaries Company, limited, and the Pillsbury-Washburn Flour Mills Company, limited. The Chicago and North-Western Granaries is formed for the purpose of acquiring (as from August 1st, 1889) the capital stocks of, and taking over and carrying on the business and properties known as the Star Elevator Company, of Minneapolis, and G. W. Van Dusen & Company, of Rochester, Minnesota, both of which have had virtually the same stockholders and the same management. The share capital is £240,000, according to the prospects issued on the 19th October.

London board of directors:  
Lord Thurlow, P. C., F. R. S., 33 Chesham Place, S. W., (chairman of the Salt Union Limited.)

Sir Roper Lethbridge, C. I. E., M. P., (director of the Hansard Publishing Union, limited), Lynsted Lodge, Sittingbourne.

H. Seton-Karr, Esq., M. P., (chairman Hills Union Brewery Company, limited), Kippilaw, St. Boswells, N. B.

William A. Bevan, Esq., (director of the Economic Fire Office, limited), 148 Cromwell Road, South Kensington.

M. S. Vanderbyl, Esq., S Great Winchester St., E. C.

F. W. Honischer, Esq., (Messrs. F. W. Honischer & Co.), Merchants and Corn Importers, 30 Lime St., E. C.

Board of management in Chicago:  
John C. Black, Esq., president Continental National Bank, Chicago.

Morris Rosenbaum, Esq., (Rosenbaum Brothers), Board of Trade, Chicago.

Arthur Orr, Esq., Board of Trade, Chicago.  
Levy Mayer, Esq., (Messrs. Kraus, Mayer & Stein), Chicago.

\*G. W. Van Dusen, Esq., Rochester and Minneapolis, Minnesota, managing director.

The list of applications closed on Thursday, the 24th October, after having been opened four days. In that short space of time the capital was, I hear, subscribed three

times over and the letters of allotments have now been sent out.

The Pillsbury-Washburn Flour Mills Company, limited, has been formed to acquire as a going concern and carry on the following flour mills, business and properties at Minneapolis, in the state of Minnesota.

1. Chas. A. Pillsbury & Co.
2. Washburn Mill Company (The Palisade and Lincoln Flour Mills.)
3. Minneapolis & Northern Elevator Company.
4. Minneapolis Mill Company.
5. St. Anthony Falls Water-Power Company.

6. 1,340 shares (being the majority) of the capital stock of the Atlantic Elevator Company.

The prospectus was issued on Oct. 31st and states that the company is incorporated under the companies acts 1862 to 1889. Share capital £1,000,000 divided into

50,000 eight per cent. cumulative preference shares of £10 each	£ 500,000
50,000 ordinary shares of £10 each	500,000
	£1,000,000

Six per cent. first mortgage debentures for £635,000.

The preference shares are preferred both as to capital and dividend.

The dividends on the preference shares are payable half-yearly on the 1st July and 1st January in each year, and the directors have taken power to pay interim dividends on the ordinary shares. The debentures will be secured upon all the bonds to be issued under a registered mortgage and trust deed made by an American company, charging the freehold property and buildings, fixed plant and machinery to be acquired. Interest will be payable half-yearly on the 1st May or 1st November.

The debenture issue may hereafter be increased by an amount not exceeding £240,000 for the purpose of extending the water-power.

£70,000 preference shares, £70,000 ordinary shares and £160,000 debentures are to be reserved for issue fully paid-up at par to the vendors, in part payment of their purchase money. The remainder of the shares and debentures are offered for public subscription.

The directors are:  
Richard H. Glyn, Esq., director Bank of British North America.

J. Flower Jackson, Esq., Jackson Bros., Hop Merchants, Denman Chambers, London Bridge.

Sydney T. Klein, Esq., Wm. Klein & Sons, Flour Merchants, St. Tower St.

E. T. Rose, Esq., 1 Wilton Place, S. W.  
Committee of management in America:

\*Chas. A. Pillsbury, Esq., managing director;

\*John S. Pillsbury, Esq., Ex-Governor of Minnesota;

\*W. D. Washburn, Esq., U. S. Senator for Minnesota.

Mr. Bernard Dyer, of Great Tower Street, has made for the London Corn Trade Association a number of analyses of Indian wheats sent from the several ports of India during every month in the past year, in most cases. The average impurities for the year, including grain other than wheat, seeds and dirt, were from 3.45 to 5.12 per cent. in the different varieties from Calcutta, from 2.77 to 3.08 in wheats from Bombay, from 7.05 to 7.49 in those wheats from Kurrachee, from 4.41 to 5.41 in Delhi wheats, 3.72 in cargoes from Jubbulpore and 2.87 in Atbara shipments.

By a decree, Russian decree of the Imperial Council, approved by the Emperor, the construction of 10 grain elevator depots is authorized on the railway lines of the Southwest, namely an elevator at Odessa and nine at the stations of Kyryopol, Novoakrainka, Prylitea, Bojisteche, Polonnoe, Schowbooka, Proskourou, Popelna and Skinosy. The appropriation of the ground required for the Odessa elevator are enjoined. The South-Western Railway Company is authorized to borrow on the pension's stock of its employees a sum of 675,000 rubles for the construction of the aforesaid elevators. The well-known firm of S. Howes, of Silver Creek, New York, and 64 Mark Lane, London, E. C., has been asked to tender for the necessary warehouse cleaning machinery.

The rates for the Odessa elevator will be as follows per pood (=36 pounds avoirdupois.) A copeck is about 1/4 of a cent.

	Copecks.
For unloading in their warehouses	.25
For weighing in their warehouses	.20
	.45
For warehousing the wheat one month	.33
For the necessary ventilation of the wheat, bi-monthly	.33
If according to the condition of the wheat, or on the desire of the proprietor, ventilation is effected more than twice monthly, 15 copecks for each ventilation.	
Wheat Insurance	.15
	.81

The above dues are payable for 15 days at the least; they are not to be refunded if the wheat remains less than 15 days in the warehouses of the elevator.

For weighing on leaving the warehouses	.15
Loading in waggons or sacks	.35
	.50
Winnowing of wheat, if the owner requires it	.24

As regards the elevators at the nine intermediary stations above mentioned they will charge for warehousing and forwarding the wheat to its destination a tax of 2 rubles per wagon.

The National Association of British and Irish millers have not yet met since their visit to Paris, but a meeting has been fixed for the 13th of this month. It will be a very warm one and many members of the council think that the secretary will not be re-elected, as so many millers are against him.

We are to have our own Eiffel Tower, for I understand that the promoters of the Tower Company, limited, which has been organized for the erection of a tower of not less than 1200 feet in height are now offering two prizes of 500 guineas for the best and 250 guineas for the second best design of such a tower. The estimates are to show the weight of material, cost of lifts and cost of erection.

The designs and estimates are open to all competitors and must be sent in on or before the end of February next. The specifications can be obtained from the office of the company, St. Stephen's Chambers, Broadway, Westminster, S. W. A very strong committee has been formed to adjudicate on the designs.

L. MAYGROVE.

\* Will join the Board after allotment.

## IS FLAX-SEED, GRAIN?

Hon. J. R. Shaffer, secretary of the Iowa State Agricultural Society, in answer to the question above writes us. "My answer would be, no; I consider it a seed, just as much as timothy and clover are called seed. It is true that flax-seed is a Fall crop and so is timothy and clover."

## USERS OF ODELL ROLLS NEED NOT WORRY.

Dayton, Ohio, Nov. 7, 1889.

Editor THE UNITED STATES MILLER:

We are constantly receiving letters in large numbers from our customers written in response to circular sent them by the consolidated Roller Mill Co., requesting settlement for infringement of their patents in the use of our Odell Roller Mills.

Will you permit us to say through your columns, that we have settled with the Consolidated Roller Mill Co. in full for all the roller mills we ever made, and now operate under their license covering every feature of our rolls, so that our customers may now rest easy under the ample protection thus afforded them, with the assurance that they will not be disturbed in the peaceful use of their Odell Rolls.

Yours truly,  
Stilwell & Bierce Mfg. Co.  
G. N. Bierce, Sec.

## THE L. C. PORTER MILL CONTRACT LET.

Dayton, Ohio, Nov. 6, 1889.

Publishers UNITED STATES MILLER:

GENTS:—You have been informed that the 1500 bbl. mill belonging to L. C. Porter Milling Co., Winona, Minn., was recently entirely destroyed by fire. We built this mill in 1887, since which time it has been continuously and profitably operated, easily taking rank among the best mills on this continent. While the ruins were still smoking, we were awarded the contract to rebuild the mill larger and better than ever, and the fact that we were awarded this important contract without competition affords conclusive evidence of their high appreciation of the superior merits of our machinery and system of milling. Such an indorsement is most gratifying.

Yours Truly,  
Stilwell & Bierce Mfg. Co.

THE publisher of the UNITED STATES MILLER is desirous of having the names and addresses of Head Millers, Millwrights and Head Engineers in all mills having a capacity of 150 bbls. per day or more.

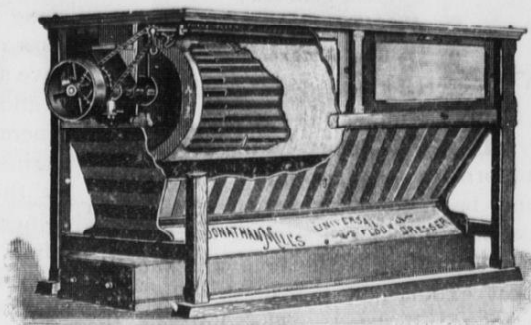
## MILLERS.

OF THE UNITED STATES AND CANADA.

Write us for our new pamphlet and revised price list of our Jonathan Mills UNIVERSAL FLOUR DRESSER. The best machine on the market. Giving satisfaction everywhere in the best mills in the country. Thousands in use. We carry a full line of Crown Silk Anchor Bolt-ing Cloths and Grit Gauzes.

## THE JONATHAN MILLS MFG. CO.,

COLUMBUS, OHIO, U. S. A.



WE SOLICIT YOUR TRADE.

Undoubtedly THE GREATEST SUCCESS of the Day!

## THE NEW ERA SCALPER

No Scouring of Bran or Middlings.

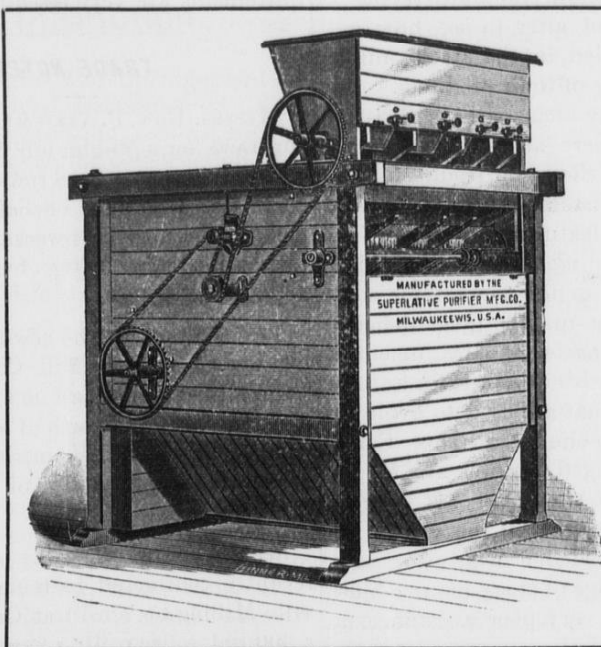
Break Flour as White as any in the Mill.

These Scalpers are in use in many Leading Mills of the country. and their work speaks for itself.

## RESULTS \* GUARANTEED

AND TRIAL ALLOWED IF DESIRED.

Works Equally Well on hard or soft wheat, long or short system. Occupies but small space and requires little power.



Will handle 4 breaks in a 75 to 100 bbl. mill, or one break in a 500 bbl. mill. Also built two, three and four high,

For Handling Breaks, Chop and Middlings.

Following is a sample of the reports we receive. We can do as well by you.

SAN ANTONIO, TEX., September 7, 1889.

SUPERLATIVE PURIFIER MFG. CO., Milwaukee, Wis.

GENTLEMEN—Your New Era Scalper is now in tip-top running order, and separates the three first breaks of our 100-bbl. mill easily and perfectly. The machine does all you claim.

Very respectfully,

C. H. GUENTHER &amp; SONS.

For Circulars and Prices Address

SUPERLATIVE PURIFIER MFG. CO., - MILWAUKEE, WIS.



## The Link-Belt Machinery Co.

Are Prepared to Furnish Machinery and Appliances for

## Transmission of Power

After the most approved Plans, by use of

## MANILLA ROPE.

For Particulars and Estimates apply to them at

CHICAGO: 11 to 23 S. Jefferson St.

MINNEAPOLIS: 200 to 202 Washington Ave. S.

SHAFTING ·  
PULLEYS  
HANGERS  
CEARS.

## Deal's Improved Grain Tester

FOR TESTING

Wheat, Barley, Malt, Oats, etc.,

Is an Indispensable Article to all Dealers in Grain.

THOUSANDS OF THEM IN USE. \* GRAIN SAMPLERS OR TRIERS.

Write for Illustrated Folder of Flour and Grain Testing Appliances and SPECIAL PRICES.

H. J. DEAL SPECIALTY CO.,  
BUCYRUS, OHIO.

## FOR SALE AND TO RENT.

[Short ads. inserted in this column for \$1 per insertion.]

**FOR SALE OR LEASE.** Mill site and improved water power for sale or lease on good terms, or will turn the property in and take partnership in flour milling business with a practical man who can furnish additional capital required. Address, F. P. BLAKE, Canon City, Colo.

**FOR SALE OR LEASE.** Fine elevator and milling property. A 150-barrel roller mill, located in central South Dakota; also two elevators, capacity 25,000 and 35,000 bushels; easy terms; small amount cash down, balance long time, low rate interest. Good crop of finest quality of wheat secured in this section. Investigation invited. Full particulars by addressing, X. X. UNITED STATES MILLER, Sep8t Milwaukee, Wis.

**FOR SALE.** GRAY'S HARBOR. Having come into possession of a flour mill, and being wholly unacquainted with the business, I desire to sell either a part or the whole of the property. It is the only flour mill in this, Gray's Harbor, region, and has a good custom and merchant business, which is rapidly increasing. It requires a man who understands handling a merchant and custom mill. There are fifty-one acres of excellent bottom land included in the property. First-class water power. Address, REV. HIRAM F. WHITE, Elma, Chehalis Co., Wash. Ter.

**PARTNER WANTED.** A practical miller, owns a first-class water-power in Dunn County, Wis. It has rock bottom and rock banks. It is worthy of careful inspection. No mill within 20 miles. Would be plenty of custom trade. The owner has not sufficient means to build a mill and wants a partner with from \$4,000 to \$6,000 to take an interest with him. If you mean straight business, write or come and see A. BELLACH, Red Cedar Falls, Dunn Co., Wis.



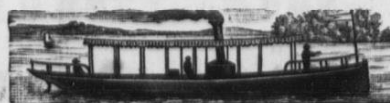
## Steam Launches

### STEAM YACHTS, TUG BOATS,

Marine Engines and Boilers, Propeller Wheels and Boat Machinery.

Send for free Illustrated Catalogue.

CHAS. P. WILLARD & CO.,  
236 Randolph St., Chicago, Ill.



Written for THE UNITED STATES MILLER AND MILLING ENGINEER.

### MILLING THOUGHTS.

By J. F. MUELLER.

THE knowledge of grinding which a miller possesses may be judged principally by the evenness or uniformity of material ground. This may be noticed at every stage and on examination of every stock in the mill. The condition of the bran will show to great extent how the break rolls have been manipulated. The hull of the wheat cut up into fragments does not deserve the name of bran, nor is broad bran indicative of good grinding. The millstone millers' ambition was to have broad flaky bran and he had good reasons for it—any fine particles would work their way on through, escaping the bran bin. In roller milling the principle aim should be to make uniform bran of moderately small size.

It is very essential to have long surface. When the wheat is very dry it is comparatively easy to finish up well, but when the wheat is not dry, as in the wet season a large amount of surface is needed for a close finish. Where rolls are overloaded there is only a small proportion of the stock which passes through them which receives the legitimate action of these rolls—that is the scraping action. Those particles which are next to the rolls receive this benefit, while all of the other particles are influenced by compression alone, by the friction of one particle against another. The feed for any kind of stock should be decided by the amount which will most thoroughly expose each particle to the scraping action of the rolls. It is absolutely necessary to have an even feed on every roll. Do not depend on looking at the feed as it enters, but be convinced that the stock is being delivered in a perfectly uninterrupted flow across the entire length. A good test to determine how evenly a feed is delivering from one end to the other is to take a board or plane surface and hold it underneath the rolls to catch the stock the entire length. Leave it there for a time, then withdraw it and take notice how evenly the board is covered in a straight line. There is another test to be made, particularly where there are shake feeds, to determine whether the feed is delivered in an uninterrupted continuous stream. It is often the case with some shake feeds that the material enters the rolls by jerks. This can be detected by entering a board to catch the grinding from the rolls and withdrawing in a slow but regular movement. If the ground material shows up in ridges it is an indication that the feed does not deliver as much on the back stroke as on the forward or visa versa. This trouble, however, is not the case with all shake feeds. There are some very good ones that have come to my notice. The feed certainly has a great deal to do with grinding evenly. It sometimes happens that the weight of the material in the hopper has a great deal to do with how it is fed. If a spout is fed into the center of the feed hopper, it is likely that it will pile up in the center and if there is but a small stream it is likely to feed heavier in the middle than at either end.

Millers often despair of adding new machinery or instituting a change in their mill. Some try to content themselves by thinking that they are well up with the times and nothing is wanted to require any change, as long as they are making as good results as their neighbors or competitors. It is always best to study well the movements of competitors, even in the smallest details. It may not always be agreeable to some of our friends to know what progress rivals are making, but the ostrich policy is always bad and a vigilant watch should be kept on all that is done by others whether their capacity is large or small.

It is often amusing to see how much some millers are wedded to a particular class or make of machines. They must have so and so's rolls, so and so's cleaners, so and so's purifiers and so on. You will generally find that only one particular engine or water-wheel will be good enough for them. In these, their favorite machines, they see perfection itself while in others they can find nothing that would suit their requirements. If you ask them to give you their reason why they adhere so much to the particular makes, they are likely to answer you that they have operated the machines in question and no others, and by sifting matters a little farther it will be apparent that they often have but a faint idea of the general construction of the machines that they would not have "at any price." Possibly they are laboring under delusions because one or two of their progressive neighbors are operating this special outfit of machinery. It seldom occurs that these parties, after whom they are trying to copy, are looked after to see how well they are qualified in the art of milling and in disposing of their products.

The popularity of a machine does not indicate that there are not others that will accomplish the same results fully as well. A new machine just introduced may have some features that are superior to the corresponding features of machines that have been on the market for some time. Yet, there may be great deficiencies in other parts of the machine. Sometimes a machine has certain features or adjustments that are used to avoid infringing on some one else's rights. Sometimes these changed features are for the better and often times not. It is very evident, however, that if the miller has no thorough knowledge of grinding or is no particular judge of stock, his machines will render him very poor assistance, no matter how perfect or convenient the machines may be.

The writer has in mind a number of mills where there are hardly two stands of rolls of the same make, some are among the first rolls put on the market and are deficient in many respects some of which were without springs, no throw out device and poor feeds which are anything but automatic. It is in these mills that we are apt to find purifiers in their crudest possible state, excentrics continually causing trouble, sieves requiring brushing by hand at every round made by the miller to keep the meshes from clogging. Nearly all of their reels are likely to be old style with perhaps a centrifugal or two. It is in many of these mills that results are made fully up to standard both as to quality and yield. The attendants, however, are not asleep. The miller never loses his head nor his temper. It is always gratifying to the observer to witness a thoughtful and competent miller treat a deranged and refractory piece of machinery. It is easy to restore order, and make the inefficient efficient, by the exercise of intelligence and skill. It is needless to say that such a miller is a treasure and really deserves a better fate than to be continually annoyed by old-fashioned time-worn machinery.

To the advancement of the art of milling it is especially essential to study the system in order to ascertain the weak spots. Some millers look with so much anxiety to their offal as to overlook the first object of adjusting their rolls which is to make good flour. Others again so intently aim at the superiority of the flour, that the feed is entirely neglected. Ordinarily, neither course is advisable, nor can be profitable.

There probably never has been a time when the systems of milling have been so varying. There are the short, medium and long systems. There was a time when there was but one. It was not known by any particular name. It soon branched out in various forms. It is

evident that this system was not devoid of all advantages on which its claim was based, otherwise it would have held its own as it first started out. It is yet and forever will be the case that each individual miller must decide for himself how to suit all the conditions with which he is surrounded.

It may be depended on that a system based on simplicity must be the best. A system to be simple need not necessarily be short, but if every machine is made to do all that it was built for, or rather that its actual capacity will admit of, then that system must necessarily be as short as it is advisable to make it. It has been my observation that in some short mills it was found convenient to return stock that lacked a finish at times. Whether a system be long, medium or short, there should be sufficient leeway to enable the miller to grind without any drawback or loss in any kind of weather or with any kind of wheat. These requirements are very essential.

### TRADE NOTES.

MESSRS. EDW. P. ALLIS & Co. have taken contracts for a 50-bbl. mill for A. Graves, Loyal, Wis.; also for 8 run of 4½ ft. stone and a large amount of shafting and pulleys for the Rosemalt works, an immense institution now being built at Waukegan, Ill.

THE contract for the new 3000 bbl. mill for the American Mill Co., Nashville, Tenn., (mentioned last month) amounts to about \$300,000 worth of work. When this is completed the American Mill Co., have a daily capacity of about 5000 barrels.

MESSRS. Edw. P. Allis & Co., have recently contracted to remodel the Orrville Milling Co.'s mill at Orrville, O., to a 600 bbl. roller mill; a new 50 bbl. mill for John H. Nordick, Stephen, Minn.; a new 75 bbl. mill for V. Batz, St. Cloud, Minn.; a new 50 bbl. mill for Alfred Gillett, Vermillion, S. Dak.

THE STILWELL & BIERCE Manufacturing Co., of Dayton, O., have good reason to feel proud of their well-known "Victor" turbine, for the *Academie Nationale* of France awarded the Grand Gold Medal to the one on exhibition at the Paris Exposition. The demand from foreign sources for turbines of the "Victor" pattern is large and is constantly growing, and it is evident that it is appreciated abroad as well as at home.

THE H. J. Deal Specialty Co., of Bucyrus, O., have for a long time past had and now enjoy a heavy trade with millers for various special articles. The Improved Grain Tester has come to be considered an absolute necessity. Of late, brewers and maltsters and barley buyers generally have become acquainted with its value and they are purchasing and using them as liberally as the millers and wheat buyers. The tester will pay for itself very quickly.

WE are gratified to learn that Messrs. Beynon & Murphy of Watertown, Wis., are meeting with great success in introducing their specialties, the Beynon Aspirator, Beynon Roller Mill Adjuster and Beynon Electric Relief and Alarm for preventing elevators, conveyors, spouts, etc., from choking up. The firm is kept very busy in filling orders, and we have heard that their devices give satisfaction wherever they have been placed. See description advertisement elsewhere.

THE CASE MANUFACTURING Co., Columbus, O., whose works were burned out some months ago, are moving into their large new establishment where their facilities will be of the best for the economical manufacturing and shipping. Although they have been obliged to work under difficulties while their new plant was being erected, they have been able to turn out a large amount of work. We congratulate this company on their new move, and

trust it may be the beginning of an era of prosperity to them.

THE JONATHAN MILLS MFG. Co., have got settled in their new plant at Columbus, O., and are better prepared than ever to carry on the large and increasing business which they have built up. Their works are centrally located and all goods can be shipped from their doors. Some very fine machinery for special work has been placed in position and works to perfection. The Company will, it is said, introduce some new milling machinery on the market during the coming year, which will create a sensation. Recently they have received the order for the complete bolting system in the large new mill at Toledo, O., also for the new mill at Liverpool, O., and for a mill at Comberland, Md., besides a large number of single orders from different parts of the country.

THE WESTINGHOUSE MACHINE Co., report the following sales for October, 1889, up to and including Oct. 21: Juniors, 50 Engines, 935 H. P., Standards, 16 Engines, 645 H. P., Compounds, 30 Engines, 2510 H. P., total 76 Engines 4090 H. P.

Among the prominent buyers may be mentioned the following: Otis Iron and Steel Co., Cleveland, O.; G. H. Nichols & Co., New York, N. Y.; Allegheny County Light Co., Allegheny City, Pa.; Thomas Dolan & Co., Philadelphia, Pa.; Albion Electric Light Co., Albion, N. Y.; Parent Paper Co., Amanda, O.; Missouri Electric Light and Power Co., St. Louis, Mo.; Philadelphia and Reading R. R. Co., Philadelphia, Pa.; Girolamo Taddei, Rome, Italy; Koefoed & Hauberg, Copenhagen, Denmark; New York Cent. & Hudson River R. R., New York, N. Y.

### PROGRESS OF INVENTIONS SINCE 1845.

In the year 1845 the present owners of the SCIENTIFIC AMERICAN newspaper commenced its publication, and soon after established a bureau for the procuring of patents for inventions at home and in foreign countries. During the year 1845 there were only 502 patents issued from the U. S. Patent Office, and the total issue from the establishment of the Patent Office, up to the end of that year, numbered only 4,347.

Up to the first of July this year there have been granted 406,413. Showing that since the commencement of the publication of the SCIENTIFIC AMERICAN there have been issued from the U. S. Patent Office 402,166 patents, and about one third more applications have been made than have been granted, showing the ingenuity of our people to be phenomenal, and much greater than even the enormous number of patents issued indicates. Probably a good many of our readers have had business transacted through the offices of the SCIENTIFIC AMERICAN, in New York or Washington, and are familiar with Munn & Co.'s mode of doing business, but those who have not will be interested in knowing something about this, the oldest patent soliciting firm in this country, probably in the world.

Persons visiting the offices of the SCIENTIFIC AMERICAN, 361 Broadway, N. Y., for the first time, will be surprised, on entering the main office, to find such an extensive and elegantly equipped establishment, with its walnut counters, desks, and chairs to correspond, and its enormous safes, and such a large number of draughtsmen, specification writers, and clerks, all busy as bees, reminding one of a large banking or insurance office, with its hundred employees.

In conversation with one of the firm, who had commenced the business of soliciting patents in connection with the publication of the SCIENTIFIC AMERICAN, more than forty years ago, I learned that his firm had made application for patents for upward of one hundred thousand inventors in the United States, and several thousands in different foreign countries, and had filed as many cases in the Patent Office in a single month as there were patents issued during the entire first year of their business career. This gentleman had seen the Patent Office grow from a sapling to a sturdy oak, and he modestly hinted that many thought the SCIENTIFIC AMERICAN, with its large circulation, had performed no mean share in stimulating inventions and advancing the interests of the Patent Office. But it is not alone the patent soliciting that occupies the attention of the one hundred persons employed by Munn & Co., but a large number are engaged on the four publications issued weekly and monthly from their office, 361 Broadway, N. Y., viz.: THE SCIENTIFIC AMERICAN, the SCIENTIFIC AMERICAN SUPPLEMENT, the Export Edition of the SCIENTIFIC AMERICAN, and the Architects and Builders Edition of the SCIENTIFIC AMERICAN. The first two publications are issued every week, and the latter two, the first of every month.

# The Geo. T. Smith Roller Mill

## AN IMPORTANT DECISION.

### A CERTIFIED COPY — OF — JUDGE BROWN'S DECISION

— IN THE —  
U. S. CIRCUIT COURT, EASTERN DISTRICT OF MICHIGAN,  
IN EQUITY.

THE CONSOLIDATED ROLLER MILL COMPANY,  
vs.  
GEORGE T. SMITH MIDLINGS PURIFIER COMPANY. }

#### On Motion for Preliminary Injunction.

This was a bill in equity to recover damages for the infringement of letters patent No. 222,895, issued to William D. Gray, December 23, 1879, for an improvement in roller grinding mills. The invention covered by the patent was stated in the preamble to consist "in a peculiar construction and arrangement of devices for adjusting the rolls vertically as well as horizontally, whereby any unevenness in the wear of the rolls, or in their journals or bearings may be compensated for, and the grinding or crushing surfaces kept exactly in line," and also "in the special devices for separating the rolls when not in action, and in other details." The defense raised upon this motion is fully stated in the opinion of the court.

MR. GEORGE H. LOTHROP, for the Plaintiff.

MESSRS. PARKER & BURTON, for the Defendant.

BROWN: J.

A preliminary objection in the nature of a plea of *res adjudicata* is taken by the defendant against the issue of this injunction. Prior to the opinion of this court in the case of the Consolidated Roller Mill Company vs. Coombs, 39 Fed. Rep., 25, sustaining the validity of the plaintiff's patent, a bill had been filed in the Western District of Wisconsin by one Allis against Freeman to compel the defendant to desist from using a machine which was claimed to infringe several patents, among which was the Gray patent, upon which this suit is based. A decree was made dismissing the bill, and it would appear from a letter of the learned Judge to the solicitors put in evidence in the case, that the court was of the opinion that the Gray patent had been anticipated by an English patent to one Lake, and hence was invalid for want of novelty. It appeared that plaintiff in that case claimed and perfected an appeal to the supreme court from this decree, and the cause was docketed in that court in October, 1887. Subsequently this appeal was dismissed upon the motion or by the consent of the appellant.

Had the opinion of the Court in that case been called to our attention at the time the Coombs case was argued, it is quite probable that out of the usual comity obtaining among courts of co-ordinate jurisdiction in this class of cases, we should have waived our own views and deferred to it, so far at least as it covered the issues involved in this case. It seems, however, that the reason for dismissing the bill in the Wisconsin case was not then known, and no stress was laid upon it in the argument of the Coombs case. Having expressed our own opinion of the patent in that case, it is now too late to claim that, as matter of comity, we ought to follow the Wisconsin case. It is equally clear that it does not create a case of estoppel. Not only is no record produced showing upon what ground the bill was dismissed, but neither the plaintiff nor the defendant in this suit were parties to that. A decree declaring the invalidity of the patent is in no sense a proceeding *in rem*, and does not prevent the same or a different plaintiff from prosecuting a suit against another defendant and establishing its validity upon different or even upon the same evidence. This precise thing was done in *Ingersoll vs. Hewett*, 16 Blatchford, 378, which was also a bill in equity for the infringement of a patent. In defense it was argued that the plaintiff had previously filed a bill against different parties for an infringement of the same patent. The defense of which had been assumed by one Topham, under whom the defendants in that suit as well as the defendants in the suit under consideration, were licensees. It was held by Judge Wallace that, assuming that Topham was a party to the former suit, that defendants could not avail themselves of the decree in his favor, upon the ground that there was a want of mutuality in the estoppel. The same ruling was made by Mr. Justice Blatchford, in respect to the same decree in the *United States Stamping Company vs. Jewett*, 18 Blatchford, 469. The facts of the present case are much more conclusive against the estoppel, as neither of the parties to this suit were parties or privies to the case of Allis vs. Freeman.

Second, In the case of the Consolidated Roller Mill Company vs. Coombs, 39 Fed. Rep., 25, we had occasion to consider the Gray patent in issue in this case, and came to the following conclusions:

1st. That it had not been anticipated by the Lake-Nemelka patent or by any other of the devices offered in evidence, and that the second, third, fourth and fifth claims were valid.

2d. That the patentee was not debarred from the benefit of the doctrine of mechanical equivalents by the fact that his original claims for a combination of a vertical and horizontal adjustment by any method had been rejected by the patent office, and he had accepted restricted claims in their place.

3d. That the Mawhood machine, containing as it did all the elements of the patentee's combination, though differently arranged and located and with a lever of a different order, was an infringement of the Gray patent.

It was not, however, intended to decide that the Gray patent covered all methods of horizontal and vertical adjustments, or methods of making such

adjustments by means essentially different from those employed by the patentee. Indeed, this could not have been done without disregarding the limitations put by the patent office upon the original claims as well as the state of the art as it existed at the time the patent was issued. Other methods of adjusting rolls, both vertically and horizontally, existed before Gray filed his application, and in at least one there was a combination of both adjustments as applied to the same roll. That the defendant has produced a machine which accomplishes the same results as the plaintiff's, will not be disputed, and the only question is whether it has accomplished them by the same or by an essentially different device. These results are four in number.

1st. A vertical adjustment at each end of the movable roll.

2d. The horizontal grinding adjustment, by which the distance between the two rolls is kept precisely the same while the rolls are in operation.

3d. A spring device by which the rolls are made to yield to a breaking strain whenever a nail or other hard substance enters between them.

4th. A stop and holding device by which the rolls are spread apart when not in operation, and are thrown together again without a new adjustment.

To accomplish these results the patentee makes use of:

1st. Two rolls, one of which is fixed and the other adjustable. His specifications also seem to contemplate that both rolls may be made adjustable, but in what manner is not stated. Indeed, it is difficult to see how this could be done without taking away from the combined devices applied to the other roll some one of the elements which would destroy the integrity of the combination.

2d. An upright swinging arm at each end of the adjustable roll, upon the pivot of which the roll is moved in a vertical direction.

3d. A rod, G, at one end of which are devices for the grinding adjustment, and a spring urging the upper end of the arm inward, but yielding to a breaking strain, and at the other end of the stop and holding devices for the spreading adjustment.

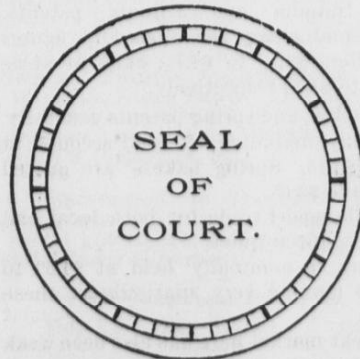
In defendant's machine both rolls are adjustable. To one is attached the spring and a nut and eccentric for vertical adjustment, and to the other the grinding adjustment and the stop and holding device. There is no lever or swinging arm, but the journals of both rolls rest upon horizontal shafts, one of which may be raised and lowered for the vertical adjustment, and the other of which the slides forward and back, carrying the second roll to and from its fellow. There is no rod, G, fitted at either end with the several devices for horizontal adjustment, and nothing properly corresponding to it, since the shaft attached to one of defendant's rolls corresponds about as nearly with it as the one attached to the other. If we were to attempt to locate it we should have to say that it was divided into two separate parts, by one of which the vertical adjustment is accomplished, while in plaintiff's patent this adjustment is made by means of a swinging arm and not by means of the rod. This rod and the upright swinging arm we regard as of the essence of the plaintiff's patent. Should defendant's device be adjudged an infringement, we should not know where to draw the line, providing the defendant's device accomplished four results. This evidently was not the scope of the Gray patent, since the original claims for the combination of those adjustments had been rejected by the commissioner. While the sliding support might be, under certain circumstances, equivalent for the swinging support, in view of the state of the art, and the limitations upon plaintiff's claims, we cannot consider it so in this case. Under the view we have taken we find it unnecessary to consider the claims separately. The departure of the defendant's machine from the underlying theory of the plaintiff's is too radical to require us to descend to details. We are clear in our opinion that the injunction should be denied.

#### UNITED STATES OF AMERICA.

THE CIRCUIT COURT OF THE UNITED STATES  
FOR THE EASTERN DISTRICT OF MICHIGAN.

THE CONSOLIDATED ROLLER MILL COMPANY,  
vs.  
GEORGE T. SMITH MIDLINGS PURIFIER COMPANY. }

I, WALTER S. HARSHA, Clerk of the Circuit Court of the United States for the Eastern District of Michigan, do hereby certify, that the above and foregoing is a true copy of the opinion of Judge Brown rendered in the above entitled cause; that I have compared the same with the original and it is a true and correct transcript therefrom and of the whole thereof.



IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of said Court at Detroit, in said district, this 4th day of November, in the year one thousand eight hundred and eighty-nine, and of the Independence of the United States the one hundred and fourteenth.

WALTER S. HARSHA,  
Clerk.

## Geo. T. Smith Middlings Purifier Co.

CANADIAN SHOPS--STRATFORD, ONT.

JACKSON, MICH.

(From our own Correspondent.)

## OUR BALTIMORE LETTER.

Rich Reading for Millers—"Oriole" has His "Say" About Tricky Brokers—Trade Situation in Baltimore—Trade Notes, Etc.

**W**E beg leave to digress from our jurisdiction this month in order to touch upon the wholesome lessons which have recently been brought to our attention.

There is no surer way of correcting an evil than by agitating it, and for that very reason we most heartily commend and endorse the manly action of the *Northwestern Miller* in giving publicity to the abuses which have for a long time existed in the Richmond flour market. No one posted on the subject can doubt for an instant the truthfulness of its statements.

Through trickery and chicanery, therefore, that market has become a target for calumny and a synonym for corruption.

Salesmen of this country who formerly worked that territory have been instructed by their constituents to do so no more forever.

The reputation of the town in fact has been notoriously bad for many years, as the estimable letters of "H. Jay Greene" will abundantly testify.

We do not pretend for one moment to say that all flour dealers in Richmond are unprincipled. No, no, far from that, for we know to the contrary, but we do assert that there is a foul and polluted minority down there whose deeds contaminate the whole as a drop of ink contaminates a glass of clear water, and it is this very same minority that invariably rises up and shouts its innocence whenever the subject is broached.

We do not believe that any one "to the manner born" would be guilty of besmirching the name of Richmond, so it must be the scapegoats, carpetbaggers, plunderers, and fugitives from justice that really do the business. Not content with casting odium upon their own beautiful city these miserable runts of creation are actually bringing discredit upon the entire South as well, by their abominable and nefarious practices, and when the victims of their iniquity expose them to the world, these renegades of pollution have the gall and audacity to pose as white-robed martyrs before the public!

We have no reference whatever to the high-minded honorable gentlemen of Richmond, who are honest and straightforward in their dealings, but they too, as we, must feel deeply mortified and aggrieved at the conduct of these miscreants, who continually bring their market into disrepute. Another case where the innocent is made to suffer for the guilty. We are not hounding down the upright merchant, who, with a clear record, has nothing to fear, but we are after, and intend to bring to grass, too, the wolves in sheep's clothing, the devils masquerading as saints, that infect our markets, and which are a stench in our nostrils, a curse to our country, and a hindrance to our prosperity.

It is therefore high time for all reputable southern merchants to stand together—not to disclaim evils which have really existed in the trade, but to go to work systematically and with energy and eradicate and eliminate from our midst that element which alone is responsible for the unscrupulous methods which are so often ascribed to us as a people.

Apropos of the irregularities noted in the Richmond flour trade we are reminded to cast the beam out of our own eye first, before considering the mote that is in our brothers' eye.

We are always so prone to speak of imperfections in others when in reality, closer examination of ourselves would develop similar defects.

A wholesome lesson therefore can be drawn from this Richmond episode.

We are to remember that Richmond is not the only place where rascals abide, for, on the contrary, they are found in every other market as well.

We have them here, to be sure, in a limited way only, but we have them all the same.

New York, Chicago, Boston and Philadelphia have them also, and in a greater ratio too possibly than even the rest of us, but that does not condone the offense a particle. Might does not always necessarily imply right by any means.

Now what is the nature of this canker that is slowly but surely gnawing at the vitals of trade, necessitating the imperative withdrawal of mills from certain markets and causing dissatisfaction everywhere?

Well, to be plain, it is a set of men with elastic consciences, or with no consciences at all, who are ever on the alert for an opportunity to take advantage of you.

These fellows have an insatiable fondness for the skin game—"heads I win and tails you lose."

And then too the "flim-flam" racket,

which chisels you out of something in spite of yourself, is another one of their popular pastimes.

These plausible, oily tongued pirates have a way too of glossing over their rascality so as to appear consistent. They invariably put you on the defensive, when in reality they belong there themselves.

They "bob up serenely" every time, no matter how hard you strive to keep them down.

On a declining market invoices never come up to expectations, for, with microscopes in hand they dig and root out those defects and blemishes which invariably pass muster when the conditions are reversed.

They never accept anything unless it is positively to their interest to do so.

These desperadoes are in their element only when markets are weak, sick and declining, for then like so many hungry vultures they pounce upon their prey, and having it at their mercy, then thrive and fatten upon it, until markets advance, when they crawl back into their holes again and await another chance.

In every instance they are veritable "Shylocks" who demand a pound and more of flesh.

With these sharpeners, shipments must come through by limited express via their favorite road; measure fully up to old bleached out samples alike in color, strength and uniformity; weigh 196 pounds net to the barrel, and be packed in scrupulously clean round hoop barrels, else there will be a rejection or a rebate claimed. The latter way of settlement of course is far more preferable to them, for it is on just such reclamations that these pests of the trade "live, move and have their being." Why, we have known of those who have openly boasted that their annual rebates on purchases were more than enough to pay their store expenses.

The man who will deliberately reject an invoice without sufficient provocation and accept a rebate upon it through false representations is a thief and a robber, and should be so treated and shunned by all honest men. The evil can be stamped out speedily and completely if mills will but boycott continually every dealer engaged in the practice. In conclusion we wish to say that our remarks are not intended for those in the trade who from time to time have just and legitimate causes for rejection, nor do we wish it understood that we recognize all the morality and purity in the world on the side of the miller, for, on the contrary, we do not, as our subsequent letters will show.

None but the guilty should take offense at what we have said, and their enmity we court, by the way, irrespective of consequences.

\* \* \* \* \*

The Baltimore flour market has ruled dull, weak and lower since our last review.

During the month, leading city mills have lowered prices 15 cents, while jobbers have followed suit to the extent of 25 cents per barrel.

At this writing, therefore, everything seems utterly demoralized here. The stock of flour in Baltimore to-day, exclusive of that held by local mills, is 66,000 barrels. Agents have sold to arrive during the month large lines of spring patents and bakers' at \$5.00 and \$3.50 respectively, but since then they have improved sufficiently to cover the increased tariff on all rail freights which go into effect at once.

Outside of these transactions little or no business has been done excepting of course the regular trade here with South American exporters.

Considerable spot flour is offered here now, both by agents and dealers at concessions, but it moves very slowly indeed. Until this pressure is removed from the market we can hope for no business in stock to arrive.

St. Louis patents and straights are held to-day at prices ranging from \$4.75 to \$4.85; and \$4.25 to \$4.35 respectively.

Ohio, Indiana and Illinois patents, straights and clears are offered at figures ranging from \$4.50 to \$4.75; \$4.00 to \$4.25; and \$3.75 to \$4.00 respectively.

Minneapolis, and spring patents generally, range to-day, including first and seconds, at \$4.75 to \$5.15. Spring bakers' are quoted from \$3.40 to \$3.65.

City mills report trade for both local and foreign account as quiet.

Rio extra is nominally held at \$4.50 to \$4.65, but moving very sparingly at these figures.

The wheat market here has also been weak and dull throughout the month.

Cash wheat shows a decline of 3 cents per bushel since our last report.

There seems to be no demand here for the actual stuff just now.

While clearances for the month have been unusually good, they have suddenly dropped off entirely in the last few days.

Speculation is equally as dull as the other branches of trade. Operators here are gen-

erally bullish, however, on soft spots, but see nothing very tempting in the situation, while receipts in the northwest continue so large.

The most healthy and promising thing in the outlook to us is that we are having an old fashioned fall with its tremendous movement of wheat at low prices. Such conditions augur prosperity for us every time.

Our city mills are drawing supplies largely from Kansas in the absence of them, roundabout here.

The seaboard is relatively much lower than the west and northwest on wheat, and until the difference adjusts itself, no volume of trading is likely.

We had those who felt tempted to cross the two sections, but "Old Hutch's" missionaries succeeded in scaring them off.

Stocks of wheat here are very small while quality is improving.

Values will in all probability improve steadily after the stuff is well in hand and housed for the winter.

The holiday season is approaching too, and we most always have a spurt of activity you know before that time.

## ITEMS OF INTEREST TO THE TRADE.

Charles D. Fisher, head of the grain firm of Gill & Fisher, has just returned from a protracted visit to Europe.

P. H. Hill, millers' agent of Washington, D. C., who has been dangerously ill with typhoid fever, is convalescing.

E. Thomas Rinehart, of Rinehart, Childs & Co., flour jobbers of Baltimore, is spending a few weeks at Asheville, N. C. for his health.

The new bark "Good News," twin vessel to the "White Wings," of C. Morton Stewart & Co.'s South American fleet, was successfully launched here last week.

The Centennial of the Roman Catholic hierarchy of America, was celebrated here this week with great pomp and splendor.

Conrad Reihl, Sr., who has been confined to his house for ten weeks with poison-oak poisoning in his face, is gradually improving now.

Wm. M. Powell & Co., wholesale flour jobbers of Baltimore, are about to move into their magnificent new and mammoth warehouse on South st.

Gen. John Gill, President of the Mercantile Trust Company of Baltimore, has returned from an extended trip to Europe.

Baltimore is getting back her old-time corn trade. Clearances of the cereal so far this year from this port are four times greater than those of a year ago.

A new sugar refinery is now under construction at Curtis Bay, just outside of Baltimore. When completed its capacity will be 1,200 barrels daily. It will revive too our lost reciprocal trade with the tropics.

A. Henry Nelker, owing to continued ill health, has withdrawn from the firm of Penrose, Nelker & Co., flour commission merchants of this city.

ORIOLE.

Baltimore, Nov. 14, 1889.

THE J. B. ALFREE CO., of Indianapolis, Ind., are out with a strong letter, maintaining that their roller mill does not infringe any patent. Our limited space prevents its publication herewith.

Nov. 9, after argument in the U. S. Circuit Court at Indianapolis, Ind., Judge Gresham refused to grant a temporary injunction to the Consolidated Roller Mill Co. against the Richmond City Mill Works.

## MECHANICS IN THE UNITED STATES AND ENGLAND.

**T**HE *Railway Press*, a well-known English journal, has been making a comparison between English and American mechanics, and the facilities afforded the latter for intellectual development and the cultivation of their abilities.

"We in England," says the *Press*, "hold fast to the orthodox methods of working, and do not allow the intellect sufficient development, our workmen working as mere machines, doing the work set them and nothing more, using the same antiquated tools as used by their forefathers, and with the same methodical precision. This is not always the fault of the workmen, but is, in a great measure due to those in authority over them. Instances have come to our personal knowledge where men of intelligence have suggested improved appliances or methods of working. These have been treated with contempt, with the result that for all time these men content themselves to work as they are told, and many an ingenious sug-

gestion is smothered and lost to this country. In an English railway shop the same old-fashioned tools and appliances, with a few exceptions, are used at the present day as were used thirty years ago. A body-maker's chest of tools at the present time weighs 200-weight or more. The American carbuilder's tools consist of a small chest weighing not more than a quarter the weight of an Englishman's, but each tool is so constructed as to be of the utmost service to him, and with this small chest he is able to perform the most intricate work with which he may be brought in contact, with greater precision and dispatch. Another cause why Americans surpass us in ingenuity, is that information is not withheld from them. Papers of every description are circulated and contributed to by employers and employees on an equal footing. This circulation of technical papers is greatly appreciated, and each issue is looked forward to with eagerness. Workmen, too, receive encouragement, and any suggestions made by them to their superiors, as to the most economical ways of working, are attentively listened to; if proved to be as represented, the system is tried, and the man receives the thanks of his employer, and often pecuniary remuneration as well. This system of general encouragement is one of the chief reasons why the American manufacturer is able to pay greater wages and still send his commodities to the English markets cheaper than we can produce them at home. More encouragement should be given to the mechanic in England, and any suggestion made by him should have careful consideration, and if found to be a benefit he should be rewarded accordingly. This course would stimulate the intellectual workman, and the result would be that the employer, although rewarding the man for his ingenuity would greatly benefit by it. It is a well known fact that there is plenty of ingenuity and shrewd intelligence amongst our English workmen; this has been proved beyond a doubt from time to time, and many of these so-called "Yankee" inventions are the brain work of Englishmen. And why is this so? Simply because the intelligent workman gets no encouragement from his employers here, and is driven to a country where his ability is appreciated and rewarded accordingly. Having been successful in one instance, he is encouraged to renew his efforts, the result being that the employer and the country at large are benefited thereby. With the foregoing illustrations, we think we have proved in a measure, why the Americans surpass us in ingenuity."

THE average amount of feed water required for a good economical engine is 30 pounds per indicated horse-power per hour; engines of high economy will use less than this amount, and those more wasteful will use more. A high piston speed together with a high rotative speed, is very desirable, as great power may thus be obtained from moderate sized engines, and also the evil of internal condensation is corrected to a great extent.

THE young man who learns to do a piece of work carefully will never have the trouble, as he grows older, that the one does who continually "botches" his piece, and merely works to put in the time. Take good care of your machine and it will take care of you and save you many a "cussin'." A little rub with a bunch of waste at the proper time will save many a rub with a scraper or file at some future day. See that the oil gets to the bearing intended, and the man with the sledge and chunk of brass will not bother you much. New machines, especially must be watched carefully, at first, until it finds its bearings, just the same as a new man going to work in a shop.

IF you are about to build write to the UNITED STATES MILLER for a copy of "Practical Low Cost Houses," and enclose fifty cents in stamps. It will help you.

# PRINZ'S PATENT IMPROVED COCKLE MACHINE

FOUR SIZES FROM 20 TO 110 BUSHELS PER HOUR CAPACITY.

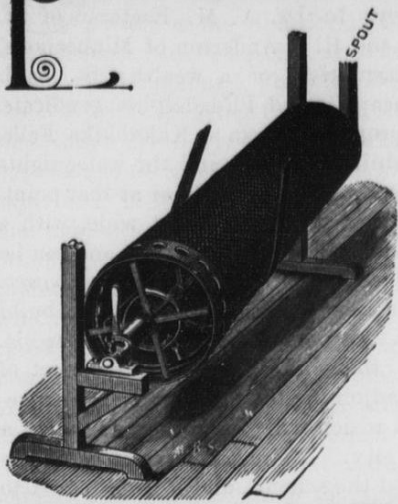
WE GUARANTEE IT WILL TAKE OUT ALL COCKLE, GARLIC AND SIMILAR SEEDS WITHOUT WASTING WHEAT. ONLY MACHINE IN THE WORLD WHICH HAS AN

## INDENTED STEEL CYLINDER.

NO COMPARING WITH ZINC CYLINDERS. ONLY TWO BEARINGS TO OIL. SLOW MOTION, LITTLE POWER, SMALL SPACE.

We send you One on Trial. You will SAVE 30 to 50 per cent. of Purchase Money by BUYING this MACHINE.

HANG IT ON THE CEILING, AGAINST THE WALL, OR SET IT ON THE FLOOR—IT WORKS EQUALLY WELL EVERYWHERE.



A Complete Machine for a Small Mill.

WATERTOWN, WIS., Oct. 7, '89.  
The Prinz & Rau Mfg. Co.:  
Gentlemen—The Cockle Machine works  
O. K. We are well pleased with it.  
Yours truly,  
THE GLOBE MILLING CO.

CHECTON, N. Y., June 22, '89.  
The Prinz & Rau Mfg. Co.:  
Gentlemen—The Cockle Machine which  
we purchased of you some time ago, is  
working to our entire satisfaction, and we  
can recommend your machine to anyone in  
want of a Cockle Separator. Yours, etc.,  
MODEL ROLLER MILLS.

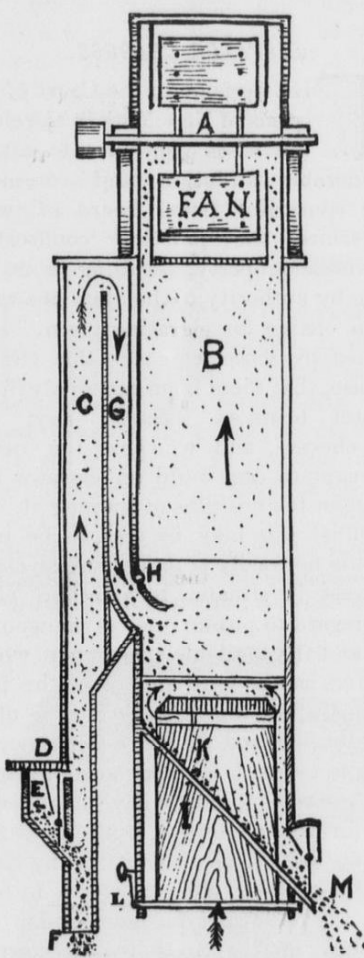
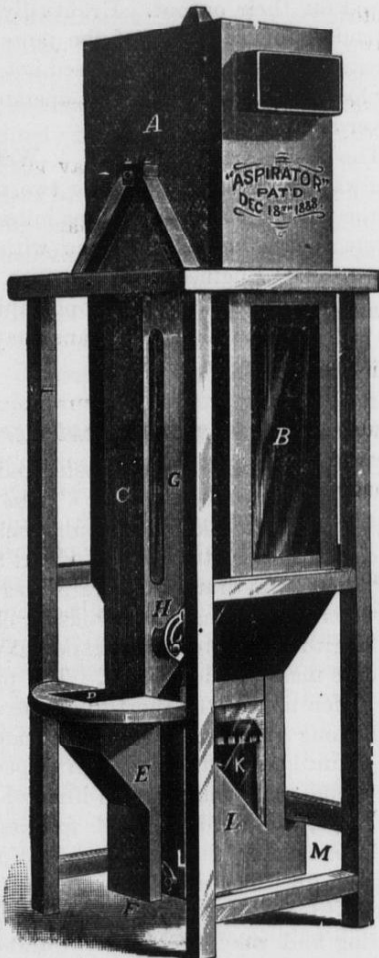
MULBERRY, TENN., Aug. 29, '89.  
The Prinz & Rau Mfg. Co.:  
Dear Sirs—I have tried the Cockle Ma-  
chine to my satisfaction, and herewith en-  
close check for same.  
Yours truly,  
J. B. THOMSON.

Address, **THE PRINZ & RAU MFG. CO.,** 659-663 East Water St. MILWAUKEE, WIS.

## THE BEYNON ASPIRATOR.

This Aspirator makes three separations of the material. It removes all Branny and Fluffy material. It removes the Crease Dirt from the material of the first-break Roll better than any Double Scalper or other machine ever produced. For dusting the break-material as it leaves each Scalper it has no equal, and works to perfection on the different reductions of Germ Stock.

Being upright, it requires very little space, and is the lightest running machine in the market.



The material enters at Hopper D, having an Automatic Valve E to prevent the air entering over the material into Flue C, the clean material discharges at F and the air current carries the lighter material over the Return Flue G and entering the Chamber B, which is provided with a Hopper Bottom, and passes into the Supplementary Flue I, while a draft of air from Flue K carries the lighter material up through the Fan A, while the heavier material discharges through the Automatic Valve M, thus making three separations of the material: one at F, one at M, and one through the Fan A.

The Automatic Valve E distributes the feed evenly its entire width, excluding the air from going over the material into the Flue C, consequently securing a fine draft of air its entire length. Valve H is to regulate the draft in Flue C and G. The bottom of Flue K is provided with a Valve L to regulate draft in Flue I.

The Automatic Valve M excludes air from entering the Supplementary Flue I, and is so sensitive as to discharge the smallest quantity of material.

Give capacity of your Mill, and enquire for prices and particulars.

## BEYNON & MURPHY, Watertown, Wis.

— ALSO MANUFACTURERS OF THE —

### BEYNON ROLLER MILL ADJUSTER

A most perfect device that may be applied to any of the Rollers now in use.

### THE BEYNON ELECTRIC RELIEF AND ALARM

An effective preventive for choking Elevators, Conveyors, Spouts, etc.

### THE PEERLESS HOLIDAY NUMBER

## THE NORTHWESTERN MILLER

will be the finest trade paper ever printed without exception.

Superbly Illustrated. Embossed Covers. Printed on Enamelled Paper.

AMONG ITS PROMINENT FEATURES WILL BE

PORTRAITS of the Officers of the Corn and Flour Trade Associations of London, Glasgow and Liverpool.  
FROM MILL TO MARKET, consisting of 30 pages of opinions of prominent Mill Furnishers, Mill Owners, Head Millers and Foreign and Domestic Flour Sellers on the present state of the trade.  
An illustrated article on MILLING ARCHITECTURE, with original plans, elevations, etc., by Louis H. Gibson.  
SHORT SYSTEM MILLING, by W. F. Putnam, of The Cleveland Milling Co.

AMONG THE CONTRIBUTORS TO THIS NUMBER WILL BE

Edward Everett Hale, Edward Atkinson, Joel Benton, Howard Pyle, James Whitecomb Riley, Charles Barnard, James Lane Allen, Robert J. Burdette, Bill Nye, H. Jay Green.

WILL BE OUT DECEMBER 20.

Address for Advertising Rates, The Northwestern Miller, Minneapolis, Minn.

1890.

### Harper's Magazine.

ILLUSTRATED.

A new Shakespeare—the Shakespeare of EDWIN A. ABBEY—will be presented in HARPER'S MAGAZINE for 1890, with comments by ANDREW LANG. HARPER'S MAGAZINE has also made special arrangements with ALPHONSE DAUDET, the greatest of living French novelists, for the exclusive publication, in serial form, of a humorous story, to be entitled "The Colonists of Tarascon: the Last Adventures of the Famous Tartarin." The story will be translated by HENRY JAMES, and illustrated by ROSSI and MYRBACH.

W. D. HOWELLS will contribute a novelette in three parts, and LAFACIO HEARN a novelette in two parts, entitled "Youma," handsomely illustrated.

In illustrated papers, touching subjects of current interest, and in its short stories, poems, and timely articles, the MAGAZINE will maintain its well-known standard.

### HARPER'S PERIODICALS.

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HARPER'S MAGAZINE.....\$4 00  
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Postage Free to all subscribers in the United States, Canada, or Mexico.

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1890.

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AN ILLUSTRATED WEEKLY.

The Eleventh Volume of HARPER'S YOUNG PEOPLE, which begins with the Number for November 5, 1889, presents an attractive programme. It will offer to its readers at least four serials of the usual length, and others in two or three parts, namely, "The Red Mustang," by WILLIAM O. STODDARD; "Phil and the Baby," by LUCY C. LILLIE; "Prince Tommy," by JOHN RUSSELL CORYELL; and "Mother's Way," by MARGARET E. SANGSTER; two short serials by HJALMAR HJORTH BOYSEN. Two series of Fairy Tales will attract the attention of lovers of the wonder-world, namely, the quaint tales told by HOWARD PYLE, and so admirably illustrated by him, and another series in a different vein by FRANK M. BICKNELL. There will be short stories by W. D. HOWELLS, THOMAS NELSON PAGE, MARY E. WILKINS, NORA PERRY, HARRIET PRESCOTT SPOFFORD, DAVID KER, HEZEKIAH BUTTERWORTH, SOPHIE SWETT, RICHARD MALCOLM JOHNSTON, etc.

A subscription to HARPER'S YOUNG PEOPLE secure a juvenile library. There is useful knowledge, also plenty of amusement.—Boston Advertiser.

TERMS: Postage Prepaid, \$2.00 Per Year.

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ILLUSTRATED.

HARPER'S WEEKLY has a well-established place as the leading illustrated newspaper in America. The fairness of its editorial comments on current politics has earned for it the respect and confidence of all impartial readers, and the variety and excellence of its literary contents, which include serial and short stories by the best and most popular writers, fit it for the perusal of people of the widest range of tastes and pursuits. The WEEKLY supplements are of remarkable variety, interest, and value. No expense is spared to bring the highest order of artistic ability to bear upon the illustration of the changeable phases of home and foreign history. A Mexican romance, from the pen of THOMAS A. JANVIER, will appear in the Weekly in 1890.

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Bound Volumes of HARPER'S WEEKLY for three years back, in neat cloth binding, will be sent by mail, postage paid, or by express, free of expense (provided the freight does not exceed one dollar per volume), for \$7.00 per volume.

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ILLUSTRATED.

HARPER'S BAZAR is a journal for the home. Giving the latest information with regard to the fashions, its numerous illustrations, fashion-plates, and pattern-sheet supplements are indispensable alike to the home dress-maker and the professional modiste. No expense is spared in making its artistic attractiveness of the highest order. Its clever short stories, parlor plays and thoughtful essays satisfy all tastes, and its last page is famous as a budget of wit and humor. In its weekly issues everything is included which is of interest to women. During 1890 OLIVE THORNE MILLER, CHRISTINE THERUNE HERRICK, and MARY LOWE DICKINSON will respectively furnish a series of papers on "The Daughter at Home," "Three Meals a Day," and "The Woman of the Period." The serial novels will be written by WALTER BESANT and F. W. ROBINSON.

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## MILWAUKEE REVIEW.

**C**HANGE is still the order of the day among mills, and Milwaukee millers are not slow to see the advantages in improved machinery. Old style mills have become a nightmare to their possessors, the relentless mare making great inroads upon the spare meal bags, and the peace of mind and good name of the unfortunate miller. Change indeed, why, it is not more than fifteen years since Milwaukee was one of the greatest flour markets of the west. Every little country mill sent its product to this market and found ready sale for all grades. Now the receipts from interior points is nil. Why is this? Every mill in the country—that is now running—has been changed once and some two or three times, and yet they cannot compete with the improved mill. The milling engineers of this country are largely accountable for this state of affairs. They have been mixing their brains with their work, and the progressive miller is doing likewise.

Not long since, the writer in conversation with a prominent and successful mill manager here referred to the prosperity of the English millers, remarking that they were fast adopting American improvements. Yes, said he, but there is no danger of our losing the English market. Why? Because, although the English millers are following us, they will never overtake us. By the time they arrive at our present point of success we will have something much better, and so on indefinitely.

It cannot now be successfully denied that the radical miller is the most successful miller and the man who adopts what was a success two years ago, finds alas, too late, that he has adopted a discarded machine; other changes have come and still others are in progress.

Such, for instance as the change of taste, and judgment of mill products. Within the past few years we have heard men say, "I don't like the bread from this patent flour, I wish I could get some such as my mother used; I'd gladly give \$10.00 per bbl." But where that article is produced and offered it falls flat, and has to be closed out at about \$1.50 per bbl. less than the patent.

The great demand that has existed for low grades the past few years is doubtless due to this idea, but it is surely dawning on the foreign mind as on the American, that low grades have commanded relatively too high a price, and now they are becoming a feed product and it is doubtful whether they will ever again command a price much above feed.

We would not claim that the Milwaukee millers are the most radical of their class or the most successful, but they have all been making improvements. Notably the Jupiter which has been completely rebuilt with new and improved machinery. It has just started up and the proprietors express themselves well pleased with the quality of the product. They are running on orders up to capacity. The Phoenix has been thoroughly overhauled and improved. Their capacity still remains at 1500. They are running full time, and sell all they can make. Their products are mostly for export.

The Eagle Mills report a good demand but a little quieter than the past two months. They enjoy a very large local trade, which with an eastern domestic trade gives them no rest nor reason to complain. Their mill is kept well up in improvements.

The Gem with capacity of 350 bbls. has such a regular export trade that their time and capacity is crowded.

Reliance Mills run full time and capacity on export orders, 600 bbls. daily. The only complaint they have to make is of the extreme low price of feed, bran, mid-

dlings etc. This complaint however is not confined to them but is universal.

Duluth Roller Mill, report changes consisting of new boilers additional rolls and new machinery, to increase their capacity from 1350 to 1500. They have orders in hand for two months ahead, about one-half of which is for export.

Daisy Roller Mill is running full time and capacity 1500, about half of which is taken for export. This is the model mill of the Edward P. Allis & Co., mill builders and furnishers; is always kept equipped with the best and newest in milling appliances.

Excessive high through freights have operated to limit the export trade. Millers all along the line complain, for the rates are from 75 per cent. to 100 per cent. above former years.

The condition of the wheat market and the movement of that cereal which is so important a factor in the calculations of the miller, is this year a very singular one. While the receipts at the primaries have been nearly double that of former years, the consumption has so nearly kept pace with it that the increase in the visible supply is below the average for the season. Either our millers have an abounding faith in the future and are buying and laying by for future use or the consumption of bread in this country is increasing at a tremendous rate probably both propositions have some foundation in fact.

The great receipts of wheat show one or both of two other conditions. Either our wheat growers are hard pressed for money, otherwise our crop is more than an average. Don't.

MILWAUKEE people, will be glad to learn that the "Monon Line" with which our former fellow citizen James Barker has allied himself is making some great advances. Of course we do not know just how its done, but we think we can recognize the "fine artistic hand" of James Barker in bringing about some of the matters mentioned in the following clipping from the Chicago Tribune.

The Louisville, New Albany & Chicago (Monon) has just made some valuable acquisitions and connections in the south. Its lease of the Lexington extension of the Louisville Southern, the bonds of which it guarantees, gives it connection at Lexington with the Chesapeake & Ohio, thus making a route from Chicago to the seaboard. At Bengin they connect with the Cincinnati Southern, giving a through line from Chicago to Chattanooga and all southern points. They have leased by a guarantee of its bonds the Richmond & Beattyville railroad, which road, shortly to be opened, extends one hundred miles southeast from Versailles to Beattyville, at which point extensive canal, coking and bituminous coal and iron interests are located. From Beattyville the road will shortly be extended to and through the Cumberland mountains into Virginia. The Kentucky extensions of the New Albany road add 225 miles to its present mileage of 540 miles, giving 765 miles as the total mileage of the entire system.

**N**EW.—At Quincy, Ill., Nov. 2, a small custom flouring mill on Tenth street, owned and operated by Berrian Brothers, was burned. Loss, \$2,500; partly insured.

THE Vortex Dust Collector Co., of Milwaukee, report an excellent trade in dust collectors.

PALLANCH & SCHAUDEL's flouring mill, Holding's Ford, Minn., burned; loss, \$9,200; no insurance.

At Teeswater, Ont., Nov. 5, the steam flouring mill owned by the Teeswater Milling & Manufacturing Co., was burned. Loss, \$25,000.

THE flour mill owned by the St. Paul Roller Mill Co. in St. Paul, Minn., burned on the night of Nov. 8th. Loss, \$150,000. Insurance, \$105,000. A new mill will undoubtedly be built as quickly as possible for the company has a large and well established business both domestic and foreign.

At Fremont, O., Oct. 29, the large stone flouring mill of A. Shell was destroyed by fire. Loss, \$20,000. Insured as follows: Germania, New York, \$3,500; Phoenix of Lon-

don, \$1,000; Hamburg-Bremen, \$1,500; Westchester, New York, \$2,000; Home, New York, \$1,500; American, New York, \$1,500. Total, \$11,000.

THE Cockle Separator Mfg. Co. of Milwaukee, have recently shipped cockle separators to the following parties: Nordyke & Marmon Co., Indianapolis, Ind.; Frank Bean, Calvary, Wis.; O. L. Helmer & Co., Fond du Lac, Wis.; Jas. Pye, Minneapolis, Minn., (2 orders); Toledo Grain & Milling Co., Toledo, O.; Wm. Pfennig, Randolph, Wis.; David Oliver, Joliet, Ill.; John T. Noye Mfg. Co., Buffalo, N. Y.; A. Reaves & Son, Atlas, Va.

THE Superlative Purifier Mfg. Co., of Milwaukee, report recent sales of New Era Scalpers to the following parties: Geo. T. Chester, Lockport, N. Y.; Moseley & Motley Mill Co., Rochester, N. Y., (4 machines); Williams & Groat, Portland, Ore.; Maxwell, Hecker & Pomerene, Millersburg, O.; John F. Blake, Canton, O.; Todds & Stanley Mill Fur. Co., St. Louis, Mo., (2 orders); H. B. Eggers & Co., St. Louis, Mo., (3d. order); Winona Mill Co., Winona, Minn., (3 two sieve and one single scalper); C. T. Hanna, Pittsburgh, Pa., (2 orders); M. Martens, Iowa City, Ia.; A. J. Klinger, Greenville, O.; Toledo Grain & Milling Co., Toledo, O.; Nordyke & Marmon Co., Indianapolis, Ind., (5 machines); Dunham & Engel, Hector, Minn., (two sieve machines); Miller, Jones & Co., Prospect, O.; Robbins & Baltzell, Madison, Wis., (three sieve machines).

## ELEVATOR CHARGES.

**T**HE decision of the Court of Appeals of New York in the elevator cases continues to attract considerable attention and comment, some complaint being heard of what is termed the practical confiscation of private property, resulting from the fixing by authority of the State of a maximum charge for elevating grain. It is claimed by those who take this view of the case, that there is no monopoly in the elevator business, because any one who chooses, and who has the necessary capital, can build an elevator and engage in the business of running it. At first blush this may be seen to be true, but it is not really true, because an elevator must be situated in a certain place with regard to public lines of transportation, and the available space upon which elevators can be built and serve the purpose for which they are erected is often quite limited, and the few elevators occupying it are able to place such burdens upon the transportation of grain as seems best for their interests, without fear of competition. The authority of the State to regulate their charges seems to rest upon the fact that by and under the authority of the State they occupy a special location, giving them special privileges and enabling them to combine for the fixing of prices for what is an essential part of the operation of transportation of transferring grain from one part of the country to another. It is now generally admitted that the business of common carriers is subject to regulation by the State, and it is difficult to see by what principle these elevators, which are really an essential part of the carrying system, can be exempt from that authority. Of course we see the importance of caution in such legislation, and would regret to see injustice done; but it is to be remembered that if the laws are to represent the will of the people, monopolies of all kinds are to be more and more interfered with, for the people do not like them.

In this connection the words of Judge Andrews in rendering the decision are significant. He says: "There is a remedy at the polls and it is an efficient remedy, if at the bottom the legislation under it is oppressive and unjust. The remedy, by taking away the power of the Legislature to act at all, would be radical and complete."—*American Machinist* (Nov. 7.)

## A GREAT MILLING SCHEME IN ONTARIO, CANADA.

An Important Waterpower to Be Improved.

A letter from St. Paul states that a business transaction has just been completed which involves a gigantic scheme to utilize the waterpower of the great Kakabkika

Falls, situated a few miles from Port Arthur, Ont. Deeds have been recorded by which Thomas Marks of Port Arthur conveys to Dr. A. M. Eastman of St. Paul and R. J. Anderson of Minneapolis, representatives of a wealthy St. Paul, Minneapolis and Philadelphia syndicate, the property known as Kakabkika Falls, containing 480 acres and the water rights to the Kaministiquia River at that point. The river there is 350 feet wide, with a perpendicular fall of 100 feet, and can be developed to furnish 200,000 horse power.

The new proprietors propose to build up at that point a Canadian Minneapolis. With this end in view, a large tract of land adjoining the property has been secured which will give ample space for a large city. A large amount of capital is behind the scheme, and it is proposed to build there flouring mills equal to those of Minneapolis for grinding Manitoba wheat, pulp and paper mills for utilizing the poplar forest adjoining, reduction works for turning the silver ores of the neighboring mines into bullion, blast furnaces, sawmills, and factories of all descriptions for which a market can be found for their output. Eventually it is intended to use a part of the power for generating electricity, to be used not only for local purposes, but also to operate the silver mines.

The Port Arthur, Duluth & Western Railway is extending its line two miles to the falls. A branch of three miles will connect the Canadian Pacific with the new city. Engineers are now on the ground to make a complete topographical survey in order that the plans may be made as perfect as possible.

## CORN HUSKS FOR CLOTH AND PAPER.

One of the best utilized waste products in Austria are corn husks. These are boiled with an alkali in tubular boilers. The glutinous matter is pressed out from the fiber by hydraulic apparatus, leaving the fibers in the shape of a mass or chain of longitudinal threads, interspersed with a dense mass of short fibers. The paper for which mostly the short fibers are used—the long fibers constituting the material for spinning—is stronger than papers of the same weight made from linen or cotton rags, its hardness and firmness of grain exceeding that of the best-dipped English drawing papers, being especially adapted for pencil drawing, stenographic writing and water colors; its durability exceeds, it is claimed, that of paper made from any other material, and the corn husk parchment is not at exposed points destroyed by insects. If the gluten is left in the pulp the paper can be made extremely transparent. Again, the fiber is easily worked, either alone or in combination with rags, into the finest writing or printing papers; it also readily takes any tint or color, and can be worked almost to as much advantage into stout wrapping papers of superior quality as into fine note and envelope papers.—*St. Paul (Minn.) Globe*.

## CALIFORNIA &amp; MEXICAN TOURS.

Via the Queen & Crescent Route, have been appreciated by hundreds who have been carried across the continent with comfort to the Pacific Coast or to balmy Mexico via Lookout Mountain, New Orleans and the Sunny South, without breaks or detention, escaping the rigorous winters and the discomforts of snow blockades of the more northerly routes. This line, appreciating the generous patronage it has received, has still further improved its train service, and are now running a through Tourist Sleeping Car from Central Union Depot, Cincinnati, to Los Angeles and San Francisco without change. These Tourist Sleepers are furnished with pillows, sheets, comforters and every thing necessary to the comfort of the traveler at a very small cost. The run is made through to the Pacific in 5 days. These Tourist Sleepers leave on the following dates at 8 p. m.: Nov. 6th and 20th; December 4th and 18th; January 8th and 22d; February 5th and 19th; March 5th and 19th; April 2d and 16th; May 7th and 21st. Two Express Trains leave daily via this line, making close connections at Shreveport and New Orleans for Texas, Mexico, California and the Far West. Ask your Ticket Agent for tickets via Queen and Crescent Route. Geographically correct County maps of Kentucky, Tennessee, Alabama, Mississippi and Louisiana mailed free to any address on application to D. G. Edwards, G.P. & T.A., Cincinnati, O.

## VIBRATION IN BUILDINGS.



NE of the most perplexing problems that confronts the engineer, is the vibration in buildings caused by running machinery. Messrs. Westinghouse, Church, Kerr & Co. of New York, being frequently called on to locate Westinghouse Engines on the upper floors of building, have had a wide experience in this line, and have given the subject much thought. In determining these questions they say the character of the building, the ground on which it rests, the weight, power and speed of engines are all factors which must be considered, some of which are very indefinite, or at least, their effect is hard to pre-determine, combined with which is the very important influence, namely, the relation which the speed of the engine bears to the natural time of vibration of the floor beams. It is evident that if the slight motion which every engine has is exactly in time with the natural vibration of the floor beam, each pulsation of the engine will increase the scope of the vibration of the floor, resulting in a most disastrous shaking, while if the pulsations of the engine are in discord with the floor, comparative quiet will exist. As floor beams are usually long, and their time of vibration correspondingly long, it is usually found that a fast running engine will give less of its vibration to the floor beams than a slow running one. It is also worthy of note that the vibration of a fast running engine are more numerous and less forcible, hence easier resisted by the mass of the floor.

An interesting example of preventing vibration by discord was shown in the case of a Westinghouse 10 H. P. engine which on an upper story of a silver ware manufactory created such a commotion as to rattle the silver ware on the shelves a hundred feet distant. A change of 25 revolutions in the speed, which change was in the direction of increasing of the speed, entirely stopped the vibrations.

A most interesting work of this nature, also, is in the great coffee house of Arbuckle Brothers in Brooklyn, where two Westinghouse engines of 125 H. P. each and one of 45 H. P. are located on the fifth floor. These engines were erected on the heavy floor timbers, the floor boards being cut away and extra timbers being inserted between the joists. Across said timbers were placed oak stringers, which latter have been seasoning since the war in some unfinished vessels in the Brooklyn Navy Yard. On these the engines were mounted with plain fly wheels, and experiments were conducted to determine the speed at which it would be best to run. It was found that at 204 revolutions the vibration was at the minimum and was very slight, being as little as that caused by any of the ordinary driven machinery. The speed was therefore fixed at this point, and the wheels then made to give the proper belt speed.

The erection of engines as large as this on upper floors is somewhat novel, and should only be undertaken with full consideration of the surrounding conditions and with engines which are completely balanced.

## NO FLOUR TRUST.

Secretary of State A. Lesseur, in an interview, attributed the downfall of several trusts to the new law now in force concerning trusts. Among those he enumerated as being done away with was the flour trust. Our worthy Secretary of State is entirely in the wrong. In the first place there was no flour trust in existence, consequently the law has no terrors for the millers or flour dealers. There are Millers' Associations and its members are working to correct some evils, such as the giving of unlimited "trust" to customers, the extortion of agents, the greed of railroads in transportation charges, and lastly to meet annu-

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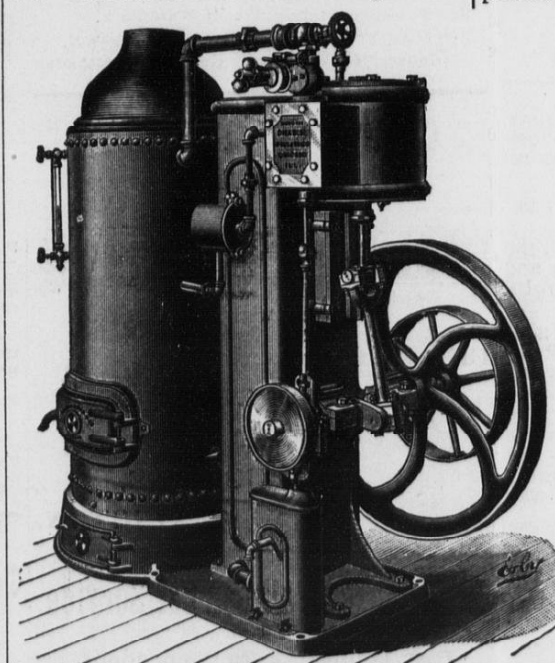
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ally or semi-annually, transact business and have a grand time generally. If this is a trust then they must be quite common. The Secretary of State is an official who should exercise some little care in his statements, for many people imagine that those he makes are accurate in every respect.—*Merchant, Miller and Manufacturer, (St. Louis.)*

## WILLARD CONDENSING ENGINE.

THE extensive sale of gas engines and hot air engines, notwithstanding the high cost of the engines, and of gas, reveals the very general demand for an engine of small power, say 2 to 4 H. P., for the use of small industries, which shall be perfectly safe, and the manufacturers of the Willard Condensing Engine (of which we give an illustration) who have been engaged in the manufacture of small engines of



various types for the past ten years, believe that, in this new engine, which they have now put upon the market for the first time, they offer a motor which possesses all the advantages of other motors of this class, and is free from the structural faults that exist in some of the other machines. The manufacturers claim that the cost of fuel will not exceed one cent per horse-power per hour; that it requires no watching; does not increase the rate of insurance, can be safely managed by a person having no knowledge of engines, and that it is absolutely safe under every and all circumstances, and cannot be exploded because there can be no steam pressure whatever.

The manufacturers, in putting this engine upon the market, desire to impress upon the public the fact, that it is not a hot air engine or a kerosene oil engine or a gas engine, but is a condensing engine using a small quantity of steam at less than one pound pressure, burning wood or coal, and is perfectly simple and

reliable; making no noise or objectionable smell.

A full descriptive circular with illustrations and prices can be obtained by addressing Chas. P. Willard & Co., 236 Randolph St., Chicago.

SECRETARY RUSK has submitted to the President the first annual report made by the Secretary of Agriculture as a Cabinet officer. The Secretary speaks of the necessity of organizing the Department on a liberal basis, and lays special stress upon the value of plain, brief publications of the results of experimental work, and their dissemination through the press. With the object of accomplishing this last purpose, the Secretary says the plan adopted, and, as results so far show, with gratifying success, has been to prepare advance sheets of every bulletin or other publication about to be issued; such advance sheets comprising a brief synopsis of the work recorded in the bulletin and giving the conclusions arrived at, which may serve as practical suggestions to the farmers. These advance sheets are furnished to the press associations, to all agricultural and many other weekly papers, to agricultural writers, and any journalists and editors applying for them. In this way, during the fifteen weeks ending October 31, no less than eighteen such synopsis or resumes were distributed as above. The agricultural papers generally and the press as a whole have shown a commendable disposition to co-operate with the Department in its efforts to keep the farmers informed as all to that may be of

practical service to them. In some cases a careful note kept of the newspapers publishing such advance sheets, apart from those covered by the Press Associations, indicate an aggregate circulation of over one million copies.

If the floor of a room is swept ever so clean with a hair broom, yet if it is then washed, the water in the pail reveals that much dirt was left; if wheat is ever so well cleaned with the dry process and then washed in a good wheat washing machine, the water reveals the dirt still remaining. *Frank Ashby.*

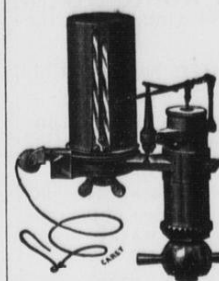
A simple method of cleaning the surface of brass goods: Lay the soiled article for a few minutes in essence of vinegar containing a pinch of salt; then take it out and rub it in the hands, dipping them occasionally in vinegar. When clean, wipe dry with a cloth. In cleaning tinted goods, omit the salt, or dip in vinegar and brush with red chalk.

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Edw. P. Allis & Co., Milwaukee, Wis., builders of complete Flour Mills, manufacturers of Flour Mill Machinery, and dealers in Supplies of every description. [Mr. 89.]

O. C. Ritter, Sta. A., Springfield, Mo., Patentee and Designer, Ritter's One Reduction Milling System. Full Roller Plants for small mills. [Aug. 10]

John C. Higgins & Son, 165 West Kinzie Street, Chicago, Ill., mfrs. of and dressers of Mill Picks. [Mr. 89.]

Robert Poole & Son Co., Baltimore, Md., manufacturers of Steam Engines, Water Wheels, Flour, Corn, Paper, Saw and Cotton Mill Machinery.

B. H. & J. Sanford, Phoenix Iron Works, Sheboygan, Falls, Wis., manufacturers of the "IMPROVED WALSHE DOUBLE TURBINE WATER WHEEL." [Mr. 89.]

John C. Kliner, York Four dry and Engine Works, York, Neb., Mill and Elevator machinery of all kinds, Engines, Boilers, Pulleys, Shafting, etc. [Mr. 89.]

The Gutta Percha and Rubber Mfg. Co., 159-161 Lake St., Chicago Ill., Belting and Rubber Goods. [Mr. 89.]

Richmond Mfg. Co., Lockport, N. Y., manufacturers of Grain Cleaning Machinery, Bran Dusters etc. [89. Mr.]

N. Y. Belting and Packing Co., N. Y. Leather Belting Co., W. D. Allen & Co., Agents, 151 Lake Street, Chicago. [Apr. 89.]

W. G. Avery Mfg Co., 10 Vincent st., Cleveland, O., Specialties: Avery Lever Belt Punches, Avery Seamless Elevator Buckets, Belting, Elevator Bolts, &c. [May '89.]

The H. J. Deal Specialty Co., Bucyrus, Ohio. Headquarters for Flour and Grain Testing Appliances, and Specialties for the Milling, Flour and Grain trades. [May 89]

A. B. Bowman, 223 Second St., St. Louis, Mo., manufacturers of Wheat Heaters.

Sprague Electric Railway & Motor Co., 16 and 18 Broad St., New York. Electric Motors. Electric Transmission of Power.

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### RECENT PUBLICATIONS.

WIDE AWAKE for November is brim full of illustrations, stories, poems etc., interesting to young and old. It is always instructive as well as amusing, and those young people who receive it regularly, are fortunate indeed. It is published by D. Lothrop Company, Boston Mass., at \$2.40 per year.

SOME time ago *The Detroit Free Press* offered \$3,000 in prizes for the three best serial stories sent in before July 1st. The result of this competition has been that Major Joseph Kirkland, of Chicago, Ill., has taken the first prize of \$1,600. His story is entitled, "The Captain of Company K." Mr. Kirkland is the author of "Zury, the Meanest Man in Spring County," "The McVeys," and other stories. The second prize goes to Omaha, Neb., and is taken by Mrs. Eliza W. Peattie. Her story is entitled "The Judge." The third prize of \$500 was awarded to Elbridge S. Brooks, of Boston, Mass. The title of his story is, "The Son of Issichar."

SEVEN writers—clergymen, college professors and public men, some of them specialists of acknowledged standing—have associated themselves to discuss special questions of social interest and import, and to prepare papers to be afterwards given to the public from time to time in the pages of *The Century*. The writers include the Rev. Professor Shields of Princeton, Bishop Potter of New York, the Rev. Dr. T. T. Munger of New Haven, the Hon. Seth Low of Brooklyn, and Professor Ely of the Johns Hopkins University. For each paper the author will be responsible, but he will have had the benefit of the criticism of the other members of the group before giving it final form. The opening paper will be printed in the November *Century*.

EDWARD BELLAMY, author of "Looking Backward," contributes a short story to Harper's Magazine, entitled "With the Eyes Shut." Other stories in the number are "Butterneggs," by Annie Trumble Slosson, "Aunt Dorothy's Funeral," by Margaret J. Preston, and "Capt. Brooke's Prejudice," by Lucy C. Lille. Prof. Chas. Eliot Norton presents a paper upon "The Building of the Church of St. Denis," and W. W. Keen, M. D., gives a comprehensive account of "Recent Progress in Surgery," in which Dr. Senn, of Milwaukee, is named, among other eminent surgeons. T. de Thulstrup furnished many illustrations emphasizing Theodore Child's description of the "The Fair of Nijnii-Novgorod." Prof. W. G. Blaikie, D.D., conceals under the title "A Corner of Scotland Worth Knowing," the name of a charming spot on the southern shore of the Frith of Forth. Two authors are their own artists: Howard Pyle describing with pen and pencil, "A Peculiar People," a German Baptist sect—the Dunkers of Pennsylvania; and Tristram Ellis what he saw on a visit to "Hierapolis and its White Terrace." Edwin A. Abbey illustrates with nine drawings "The Noble Patron," by Austin Dobson; and Alfred Parsons embellishes in like manner Wordsworth's sonnet "Hail Twilight." Howard Hall contributes a poem entitled "All's Well at the Earth," and Lucy Larcom another entitled "Discovery," which looks to the hero of 1492. George William Curtis and William Dean Howells this month both speak of recent publications and also certain subjects bearing upon our country. Charles Dudley Warner continues his story of American social life, "A Little Journey in the World" and contributes to the "Editor's drawer" a humorous essay upon a mysterious subject.

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Marinette, Green Bay,	3:10 P. M.	3:55 P. M.
Depere,		
Green Bay, Depere, Apple-	2:00 A. M.	
ton, Menasha, Neenah,	7:55 A. M.	3:55 P. M.
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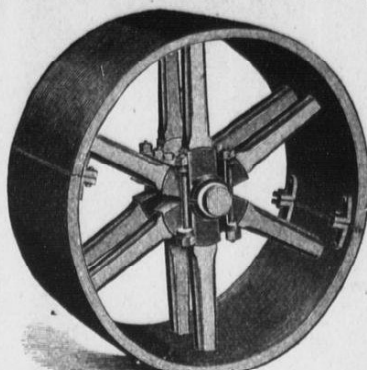
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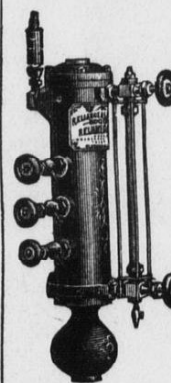
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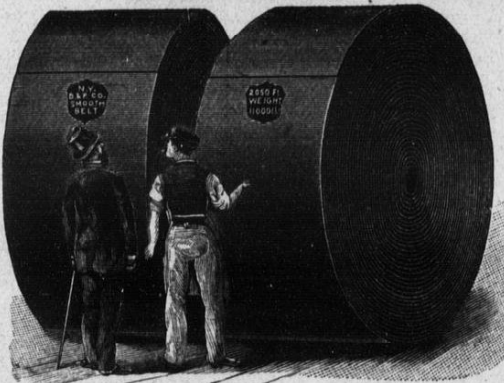
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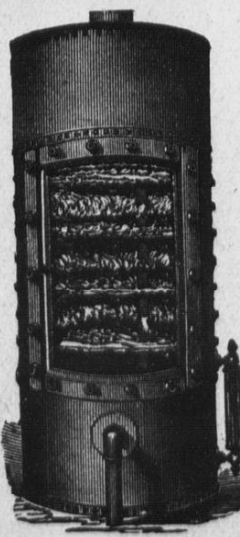
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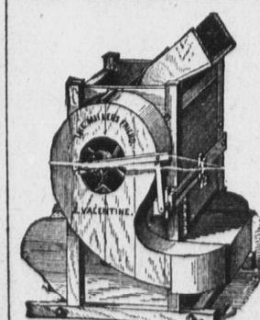
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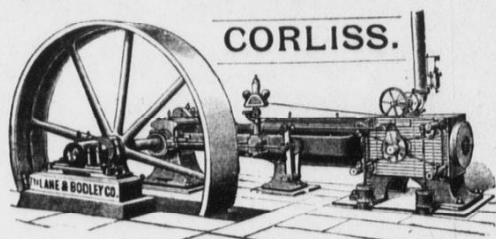


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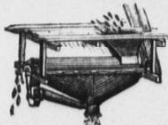
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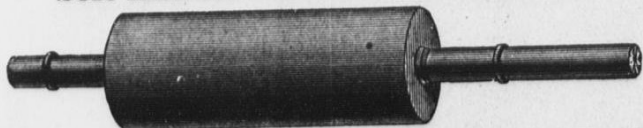
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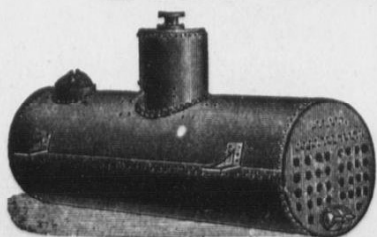
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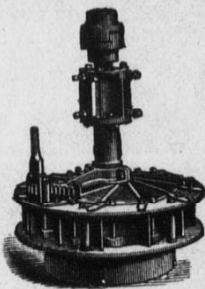
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